The Mining Journal

AND ATMOSPHERIC RAILWAY GAZETTE,

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 592.—Vol. XVI.] LONDON: SATURDAY, DECEMBER 26, 1846. [Price 6d.

MINING MATERIALS FOR SALE, BY PRIVATE CONTRACT, either in One Lot, with Sett of Wheal St. Cloer Mine, in the parish of St. Cleer, or may be divided to suit purchasers, the following

VALUABLE MINE MATERIALS:

A single-acting PUMPING STEAM-ENGINE, cylinder 30 inches diameter, 9 feet stroke, equal beam, with 7-ton boiler, cisterns, &c. &c., complete, in excellent condition, being nearly new.

27	9-feet 10-inch pumps	1	4-feet 6-inch clackdoor piece
2	9-feet 10-inch matching pieces	1	11-feet 11-inch plunger pole, with case
6	9-feet 7-inch pumps		Stuffing-box and gland piece, tap-door
1	12-feet 9-inch working barrel		piece, and windbore to match
1	10-feet 9-inch ditto	1	9-feet 10-inch windbore
1	12-feet 6-inch ditto	2	6-feet 7-inch ditto
1	3-feet 10-inch clack-door piece		

About 40 fathoms of 8-inch main rod, and about 10 fathoms of 7-inch ditto; 6 set of rod plate, rod pins, bucket prongs, and hoops; about 25 fathoms of 1⅛-inch round iron bucket rods; 10 fathoms of 1¼-inch ditto; iron set offs, staples and glands, capstan, shears, balance-bob, horse-whim, and shaft tackle, &c.

About 60 fathoms of 12-inch capstan rope; 50 fathoms of 7-inch ditto; 70 fathoms of 5½-inch ditto, with a quantity of small ditto; 2 cwts. of 5-inch gasket, 1 cwt. of hemp, ¾-inch and ⅝-inch chain; horse-whim kibbles, winze ditto, 36-gallon water-barrel, ladders, air-pipes, launders, cisterns, and a quantity of new and old timber, carpenter's bench, miner's chest, &c.; 2 smith's bellows, 38 and 30 inches; anvil, vice, a set of screws, tape, plates, smith's house, screwing stock, smith and miner's tools, blister and gad still, and a quantity of new and old iron, count-house furniture, &c.

For view, apply to Capt. Theophilus Michell, on the mine; and for further particulars, to Mr. W. Rendle, the purser, 13, Octagon, Plymouth.

PARYS MINE, AMLWCH, NORTH WALES.—TO BE SOLD, BY PRIVATE CONTRACT, ONE UNDIVIDED SIXTEENTH SHARE in the LEASE of this valuable COPPER MINE, of which about 13 years are unexpired. This share has, in the present year, realised a very considerable profit, and there are prospects of great improvement.—Full particulars, with copies of the balance-sheets for the last three years, together with a report and valuation of the mine made last month, by an eminent surveyor; and copies of the leases, from the Marquis of Anglesey and Lord Dinorben, may be seen, on application to G. K. Pollock, Esq., solicitor, 19, Essex-street, Strand, London.

STEAM-ENGINE AND OTHER SPARE MATERIALS FOR SALE, BY PRIVATE CONTRACT, at TRETOIL MINE—a 21-inch cylinder PUMPING-ENGINE, 9-feet stroke in the cylinder and 7-feet in the shaft; 4 11-inch pumps, working barrel, windbore, and doorpiece; 4 9-inch pumps, 1 6-inch windbore; about 15 fathoms of 7-inch pumps, without flanges; 1 6-inch plunger-pole, complete, and sundry other things.—Apply to Mr. Henry Thomas (secretary), 8, George-yard, Lombard-street, London; Mr. Geo. Geach, Bodmin; or Capt. Henry Williams, on the mine.

Dated Dec. 22, 1846.

WANTED, for a Colliery, 80 fathoms deep, a powerful HIGH-PRESSURE STEAM-ENGINE, in good condition—not less than 48-inch cylinder, with suitable boilers, pumps, &c., complete—to pump water and raise coal.—Apply to Mr. John Calvert, Newbridge, Cardiff, Glamorgan.

IBERIAN SILVER-LEAD ORE COMPANY—Established for SMELTING, on an extensive scale, the rich SILVER-LEAD ORES of ALMAGRERA, in SPAIN, where the company have two large establishments, about to be worked, with powerful machinery, and on a greatly improved principle of refining.

Recent surveys and assays, by experienced practical men, from Cornwall, leave no doubt that large profits are to be realised from smelting at Almagrera. The ores are rich and abundant—the smelter purchases on the mines from his own assays, and calculates his profits with certainty. A reserve of 12,000 shares, at 12s. 6d. per share, free from further calls, is now offered to the public—on which, taking 6000 tons of ore as a minimum quantity to be smelted in the first year, a dividend of not less than 20 per cent., or 2s. 6d. per share, will accrue. The official data from which the calculation of profits has been framed, may be seen at the company's temporary offices, No. 6, Bank Chambers, Lothbury; where, and at Messrs. L. M. Simon and Son, stock and sharebrokers, 7, Warnford-court, Throgmorton-street, prospectuses may be had, and application for shares may be addressed.

GLENKENS LEAD AND COPPER MINES, KIRKCUDBRIGHTSHIRE.—In consequence of MINERALS, of considerable value, having been found on the ESTATES in which the GLENKENS MINES are situate, an Act of Parliament has been obtained, to enable the trustees to GRANT MINERAL LEASES. These mines are situated in the centre of a mineral country, and in the vicinity of the flourishing lead works of Carsphairn, Lead Hills, the Newton Stewart, and Heston Island Copper Mines, the Kirkcudbrightshire Mining Company's works, and others in that part of Scotland.

The proprietor has been, for the last two years, exploring and opening the ground; and five promising lodes have been proved, which are now being opened and extended by Cornish miners. There being every prospect of a most satisfactory result at an early period, as appears from the reports of the several mine agents who have inspected the lands, as also of the captain now superintending the works, a company is being formed, to give the mines a fair trial, on the principle of the Cost-book System, by dividing the interests into 1000 shares, of which some few still remain unappropriated.

Plans of the sett, comprising about 1200 acres, and the several reports, may be seen, and every information obtained, at the offices of Messrs. Bullock and Luscombe, No. 35, Lincoln's Inn-fields, to whom applications for shares must be made.

GREAT SOUTH TOLGUS COPPER AND TIN MINING COMPANY.—*(ON THE COST-BOOK SYSTEM.)*

Capital £4500, in 1500 shares, of £3 each.—Deposit £2 per share—the remainder, as required, in calls not exceeding 10s. each per share.

This valuable mining property, held under a lease for 21 years, at the reduced dues of 1-16th, is situated in the parish of Redruth, in the county of Cornwall, and immediately adjoins, on the south, the well-known Great Wheal Tolgus Mine, which realised, during its late workings, a profit of £280,000—the greater part of which was derived from the various levels, from the adit to 110 fms. below, and from a length of ground within 100 fms. east and west of the great cross-course.

In this sett there are eight known lodes, three of which have proved very productive, as far as they have been wrought upon—£9000 worth of rich copper ore having been raised therefrom in a short time. The other five lodes are in virgin ground, below the adit level. None of the lodes in this sett have been yet so far wrought upon as to intersect the great cross-course—to do which, is one of the leading features that renders the prosecution of this mine so highly desirable.

The report of the mining agents in the prospectus—emanating from men of acknowledged celebrity and most extensive practical knowledge and information—is highly flattering, and fully justifies the conclusion, that, under judicious management, a liberal profit will be the result of a vigorous prosecution of this work, and as well renders the detail of further particulars unnecessary.

The individual liability of shareholders in this company is limited to the amount and number of shares respectively held; and any proprietor may, at any time, determine his or her liability by a relinquishment of their respective shares.

Each applicant for shares, of good reference, will immediately receive a letter of allotment for the whole amount of shares required; but, if the deposit upon such shares be not promptly paid by the day prescribed in the letter of allotment, such shares will be granted to the next unsupplied applicant.

Applications for shares, prospectuses, &c., to be made to the secretaries of the company, at their offices, 25, Castle-street, Liverpool; or at the office of the *Mining Journal*, 26, Fleet-street, London. JOHN PAINTER & CO., Secretaries pro tem.

25, Castle-street, Liverpool, Dec. 4, 1846.

*** In consequence of the limited number of shares remaining, no further application will be received after the 12th of January, 1847.

NOTICE TO THE MANAGERS OF MINING COMPANIES, SMELTING WORKS, &c.

Mr. MITCHELL (late Mitchell and Field) begs to announce, that ASSAYS and ANALYSES of all descriptions of ORES, MINERALS, and FURNACE PRODUCTS, are conducted at his LABORATORY, 23, HAWLEY-ROAD, KENTISH TOWN, to which direction all communications are to be addressed.

N.B.—Instruction in all branches of assaying and mineral analysis as usual.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE OPERATIONS.—This article affords the SAFEST, CHEAPEST, and most EXPEDITIOUS MODE of effecting this very hazardous operation. From many testimonies to its usefulness with which the manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c.:—"I am very glad to hear that my recommendations have been of any service to you; they have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this."

Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall.

UNITED STATES MINES.

COPPER ORE, from the best localities, as Grey, Black Oxide, and Sulphuret.
COBALT OXIDE, yielding from 5 to 80 per cent.
CHROME, yielding from 30 to 47 per cent.
MANGANESE, yielding from 75 to 90 per cent.
LEAD ORE, of the best quality.
ZINC, in form of Blende and Calamine.
Likewise, SOAP STONE, WHITE VITREOUS FELSPAR, BLACK LEAD, PURE WHITE LEAD, MICA, in small and large sheets.

THE ABOVE NATURAL PRODUCTIONS may be obtained in any quantity, and on the most reasonable terms, by applying to
DR. LEWIS FEUCHTWANGER, New York City.

METROPOLITAN IRON AND STEEL COMPANY.
(Provisionally Registered, pursuant to 7 and 8 Vic., c. 110.)

Capital £200,000, in 20,000 shares of £10 each.—Deposit 1s. per share.

MANAGING DIRECTORS.
CHARLES CHILTON, Esq., Steam Mills, Old-street, London
THOMAS KEARSLEY, Esq., colonial merchant, Southampton-buildings
GEORGE SCOTT, Esq., engineer, Bouverie-street
HANNIBAL GARDNER, Esq., Castle-street, Holborn.
(With power to add to their number.)

BANKERS.
London and Westminster Banking Company.

SOLICITORS.
Goddard and Eyre, No. 101, Wood-street, Cheapside.

ARCHITECT AND SURVEYOR.
William Sowter, Esq., No. 10, Union-place, Lambeth-road.

SECRETARY—James Evans, Esq.

Many projects have of late been before the public under somewhat fair auspices of success, but which have eventually turned out mere speculations, for the sole benefit of some private parties. The promoters, however, of the Metropolitan Iron and Steel Company, assert, that no such end is here contemplated, and that nothing whatever of a speculative character attaches to this undertaking, but that it is based practically on the most sure and solid foundation.

Of all the trades practised in England, and in which improvements, more or less, are daily occurring, there is, perhaps, not one which should (from the circumstance of its being one of our greatest staple articles of commerce) excite our ingenuity and attention, more than the manufacture of iron and steel. Yet it is singular that this branch has undergone less improvement than any other, and for years scarcely any advance has been made in it. The promoters have, therefore, determined to bring their object before the public; and in order to carry out to the fullest extent the manufacture of iron and steel, of the best qualities, from scrap, cast, or any other description of low-priced old iron, it is intended to form a company, whose means shall be sufficient for every purpose required. The object of the company is to establish a manufactory or works, with the requisite improved furnaces, which, by the new process contemplated, shall produce a better description of manufactured iron, than has yet been introduced from the mining districts, not only for scientific, engineering, mechanical, or any other purpose for home consumption, but also for exportation, of which the promoters feel fully satisfied they will be enabled to avail themselves.

It might be urged that a manufactory of iron in the metropolis, could not be enabled to compete with the manufacturers in the mining districts; but to refute this, the promoters are justified in saying, that they can effectually meet this, and even more, by having all the supply of old scrap and cast-iron, &c., on the spot, without any charge for carriage to and from town; and that the difference in the cost of coals, which is the only difference in favour of the country manufacturer, is more than counterbalanced by the advantage of having all the raw material produced where it has to be manufactured.

If the profit upon this article of commerce was not very great, and especially upon that which is manufactured from scrap, &c., the heavy charge of carriage would almost prohibit it altogether, for in some instances it is equal to one-fourth of the cost of the raw material itself. According to the present plan, that charge will not be incurred—consequently, so far an entire saving in the cost of production is effected. Taking this into consideration, together with the present price of the raw material, the price of labour, &c. and the advantage to be derived from the co-operation of gentlemen practically acquainted with all the minutiæ of the iron trade, the preceding desiderata will be attained, and afford ample returns for any outlay. But those practically conversant with the profits on the manufacture of iron, will have no difficulty in coming to a most favourable conclusion on this point, and will at once see that there is every prospect of this becoming one of the most successful undertakings of the present day.

It is an admitted fact, that iron and steel made from scrap, &c., are at the lowest estimate, 20 per cent. more ductile and durable than that made in the ordinary way in this country, which is of itself a considerable advantage; but, independent of this, it is quite certain that, by pursuing the modes proposed to be adopted, very excellent merchantable iron will be made from the most inferior scrap or refuse, of which London alone is capable of furnishing a most abundant supply.

Applications for shares, in the subjoined form, to be made to Messrs. Prichett and Mundy, sharebrokers, No. 68, Broad-street; Messrs. W. Busfield and Co., sharebrokers, 17, Change-alley, Cornhill; the Western Railway Exchange, 127, Regent-street; Messrs. W. and H. Davies, sharebrokers, Liverpool; Mr. Joseph Fernyhough, sharebroker, Manchester; Mr. James Renton, sharebroker, Edinburgh; Mr. R. C. Meikle, sharebroker, Glasgow; Mr. John Cooper, sharebroker, Leeds; Messrs. Goddard and Eyre, solicitors to the company, 101, Wood-street, Cheapside, or to the secretary, at the offices, 39, Moorgate-street.

To the Metropolitan Iron and Steel Company.

I request you will allot me shares, of £20 each, in the above undertaking, and I agree to accept such shares as may be allotted to me; and also to pay the deposit thereon, and sign the deed of settlement when required.—Dated the day of 1846.

Name .....
Residence .....
Trade or profession .....
Reference .....

FIRST CALL.

EAST OF SCOTLAND MALLEABLE IRON COMPANY.

Capital £100,000, divided into 10,000 shares, of £10 each.

£5 per share to be paid up in the first instance, by instalments of £1 5s. per share, at intervals of three months.

ALEXANDER ALISON, Esq., of Blaircastle, Chairman.
THOMAS RUSSELL, Esq., founder, Kirkcaldy.
JAMES MELVILLE, Esq., wood merchant, Torry.
JOHN MACDONALD, Esq., writer, Dunfermline.
ADAM BEGG, Esq., Lumfinnans.
GEORGE BIRRELL, Esq., manufacturer, Dunfermline.
JOHN RUSSELL, Esq., Dunfermline.
JAMES SMITH RONALDSON, writer, Dunfermline, Secretary.

Notice is hereby given, that the directors have made a CALL of ONE POUND per share (there having been a preliminary deposit of 5s. per share) upon the respective shareholders of the said company; and have appointed such call to be PAID on or before Tuesday, the 22d December current, to either of the undermentioned bankers, at their respective banking houses—viz:—

DUNFERMLINE, EDINBURGH, GLASGOW, DUNDEE, PERTH, STIRLING, ABERDEEN	Bank of Scotland.
LONDON	Messrs. Smith, Payne, and Smiths.
LIVERPOOL	Manchester and Liverpool District Bank.

Interest, at the rate of 5 per cent. per annum, will be charged on all calls which may remain unpaid after the 22d December current.

Parties who may wish to pay up the whole, or any part of the allotments they hold, are by the contract of copartnery, entitled, upon doing so, to receive interest, at the rate of 5 per cent. per annum, till the works are in operation.

Some forfeited shares will be allocated to suitable parties, who may apply previously to the 22d current.

It is requested, that such of the shareholders as have not yet subscribed the contract of copartnery, will be so good as to do so *immediately*, at the secretary's office, Dunfermline. Should personal attendance be inconvenient for any one, the form of a mandate, authorising subscription by proxy, will, upon application, be furnished, free of expense, by the secretary, which the party applying may sign and return.

STEAM COAL—WITHOUT SMOKE, as per experiments made at her Majesty's Dockyard, Woolwich.

CAMERON'S COALBROOK STEAM COAL, AND SWANSEA AND LOUGHOR RAILWAY COMPANY.—(Completely Registered and Incorporated.)

OFFICES—2, MOORGATE-STREET, LONDON.

The directors are now prepared to supply steam ship companies, manufacturers, shippers, and others, with the company's steam coal, either at the company's wharf at Swansea, or in London. A statement, showing by comparative trial the superiority of this coal for steam purposes over every other, and a scale of prices, may be had on application at the company's offices here, or at their wharf at Swansea.—March 18, 1846.

PATENT GALVANISED IRON WIRE ROPE WORKS
MILLWALL, POPLAR.

ANDREW SMITH begs to inform the Mining, Railway, and Shipping interests, that he has obtained a PATENT for an IMPROVED METHOD of GALVANISING IRON, producing a much superior article at a considerable saving in cost—the improved process for galvanising wire rope, adding only £10 per ton instead of £20, under the ordinary processes. The rope is extensively used in damp situations, for mining and railway purposes, and for ships' standing rigging.

TO ENGINEERS, BOILER AND TANK MAKERS, IRON SHIPBUILDERS, RAILWAY COMPANIES AND CONTRACTORS.

THE PATENT RIVET COMPANY, SMETHWICK, near BIRMINGHAM, MANUFACTURERS of BOILER AND TANK RIVETS, PINS AND COTTERS, BOLTS AND NUTS, RAILWAY SPIKES, BOLTS, &c., can SUPPLY these ARTICLES, of every description, of best quality, at lowest prices, and at shortest notice.—Prices given, and contracts to any extent taken, by Mr. ALEX. REID, No. 10, LOWER THAMES-STREET, LONDON, agent for the company.

IMPORTANT TO RAILWAY COMPANIES.

PATENT KAMPTULICON COMPANY, 18, CORNHILL.

This company having completed their new factory, are prepared to supply railway managers and contractors with an elastic material (perfectly non-absorbent) to place between the rails and sleepers, and between the frames and bodies of carriages, to prevent jarring, and, consequently, wear and tear. The elastic planking is strongly recommended to be used for the backs and sides of carriages, to prevent splinters when accidents occur.

By order of the board, P. G. GREVILLE, Secretary.

PIG-IRON.—JAMES BANKS AND CO. have always FOR SALE SCOTCH PIG-IRON, deliverable, free on board, at the Broomielaw, Port-Dundas, Ardrossan, and in the Frith of Forth, at Charleston.

Glasgow, 21, Renfield-street.

TO IRONFOUNDERS—PIG-IRON.—F. A. TIDDEMAN, PURFLEET WHARF, EARL-STREET, BLACKFRIARS, LONDON, has at all times a STOCK of PIG-IRON, of the BEST BRANDS, for DISPOSAL, at the lowest possible rates.—Delivery immediate, or at the convenience of his customers.

WILLIAM FOX AND SON, No. 53, CASTLE-STREET, LIVERPOOL, have always on SALE PIG-IRON, RAILWAY BARS, CHAIRS, and IRON of every description.—TIN PLATES, WIRE, &c.

WILSON & FRASER, 2, WELLINGTON-BUILDINGS, LIVERPOOL, and 13, EXCHANGE-PLACE, GLASGOW, have always ON SALE PIG-IRON, BAR-IRON, RAILWAY CHAIRS, and RAILWAY BARS.

MESSRS. J. PAINTER AND CO., SHAREBROKERS, MINING AND GENERAL AGENTS, 25, *CASTLE-STREET, LIVERPOOL*,

AFFORD EVERY INFORMATION as to the STATE of the MARKETS, PRICES, &c. upon application.

MINING OFFICES, 1, ST. MICHAEL'S-ALLEY, CORNHILL, LONDON.

WATSON AND CUELL, MINE AGENTS.—N.B.—STATISTICAL INFORMATION furnished (on application) to SHAREHOLDERS in MINES in Cornwall, Devon, Scotland, Ireland, Wales, and Spain.

WILLIAM TRENERY, DEALER IN RAILWAY AND MINING SHARES.—ESTABLISHED TEN YEARS.
OFFICES, No. 50, THREADNEEDLE-STREET, LONDON.

WILLIAM H. SMITH, MINING SHARE AGENT, 10, *WARNFORD-COURT, THROGMORTON-STREET*,

has SHARES FOR SALE in the following MINES—viz.:

WHEAL BLENCOWE,	WEST SHEPHERD,
WHEAL LOUISA,	EAST WHEAL FORTUNE,
WHEAL MARY PENTUAN,	VICTORIA TIN MINING COMPANY.

*** Every information will be afforded on application.

CHARLES T. CRAPP, SHARE DEALER, *TAVISTOCK.*

JOHN HARVEY, SHAREBROKER AND ASSAYER, *LISKEARD, CORNWALL.*

JAMES LANE, MINING SHAREBROKER, 75, *OLD BROAD-STREET, LONDON.*

MESSRS. LINTHORNE, JONES, AND CO., STOCK, MINING, AND SHARE AGENTS,

*** Every information will be afforded as to the markets and prices of the above, by application (post-paid) at their offices,

48, *THREADNEEDLE-STREET, LONDON.*

MESSRS. R. CLARK & CO beg to acquaint their friends and the public in general, that they have taken OFFICES as below, where they intend to carry on BUSINESS as STOCK, SHARE, and MINING AGENTS; relying with confidence upon the method adopted by them for conducting all business entrusted to their agency, Messrs. R. C. & Co. solicit a continuance of that support it will be, by strictest attention to all orders, their endeavour to deserve.

N.B.—Money advanced upon scrip and other securities.

3, Austinfriars, Broad-street, Oct. 17, 1846.

MINING OFFICES, THREE KING'S-COURT, LOMBARD-STREET, LONDON.

Mr. R. TREDINNICK, of Cornwall, being in constant communication with practical agents in the several mining districts, PROFFERS his SERVICES to capitalists and adventurers in the PURCHASE and DISPOSAL of SHARES of every description; also, obtaining authentic reports and data relative thereto. Mr. T. has on sale shares in the best dividend-paying mines in Cornwall and Devon, at from three to five years' purchase, whilst those on the eve of paying are selling at corresponding low prices. Every information afforded, on personal application, gratuitously.

BUYER in Condurrow, East Crofty, North Roskear, Wheal Jane, Cubert, Alfred Consols, Wheal Maria, West Providence, and Wheal Agar; and SELLER in West Seton, Wheal Seton, and all the best dividend paying mines in Cornwall and Devon.

MINING PROPERTY.—CAPITALISTS who are disposed to INVEST in CORNISH and FOREIGN MINES, will find the present opportunity very favourable for so doing. From large sums having been lately diverted from such investments for railway speculations, standard mines are now selling at prices that will pay the purchaser 20 per cent. per annum for his outlay. There are also other mines that are on the eve of paying dividends, which can be recommended with confidence.

Applications to be made to Mr. JAMES HERRON, mining agent, No. 3, Adam's-court, Broad-street, London.

"INDUSTRY—ECONOMY—PERSEVERANCE."

MINING COMPANY OF IRELAND.—The stated HALF-YEARLY ASSEMBLY of the Mining Company of Ireland will be HOLDEN at the company's office, 30, Lower Ormond-quay, on Thursday, the 7th of January next, at twelve o'clock noon, to receive from the board of directors a report, with abstract of the company's accounts, for the half-year ending 1st of December inst.

Dublin, Dec. 15, 1846. By order, RICHARD PURDY, Sec.

ROYAL SANTIAGO MINING COMPANY.—The directors hereby give Notice, that the HALF-YEARLY GENERAL MEETING of the shareholders will be HELD at the office of the company, on Wednesday, the 6th of January next, at One o'clock precisely, when the directors will make their report.

38, Broad-street-buildings, Dec. 19, 1846.

TRELEIGH CONSOLIDATED MINING COMPANY.— Notice is hereby given, that a MEETING of the shareholders will be HELD at the office, as under, on Monday, the 4th January next, at Eleven for Twelve o'clock precisely, when a statement of the accounts, for three months ending the 31st inst., will be laid before them. By order of the board,

57, Old Broad-street, Dec. 14, 1846. WM. NICHOLSON, Secretary.

TAMAR SILVER-LEAD MINING COMPANY— (SMELTING DEPARTMENT).—Notice is hereby given, that the INTEREST, to the 31st inst., at 5 per cent., on the DEBENTURES in this company, will be PAID on Wednesday, the 6th January, 1847, and following Wednesdays, between the hours of Twelve and Four o'clock.—The certificates must be lodged at the office of the company two clear days, in order to be examined and marked.

44, Finsbury-square, Dec. 24, 1846.

TINCROFT MINING COMPANY.—At a Quarterly Meeting of the shareholders, held at the offices of the company, 44, Finsbury-square, on Thursday, the 24th inst., pursuant to advertisement,

P. N. JOHNSON, Esq., F.R.S., in the chair,

The circular convening the meeting having been read, the report of the directors, with the accounts, were submitted—whereupon it was

Resolved unanimously,—That the report and accounts, now read, be received, adopted, and entered on the minutes.

Resolved unanimously,—That the cordial thanks of the meeting be given to the chairman and directors for their able management of the mines, and especially to the chairman, for his courteous urbanity and lucid explanations afforded to the meeting.

TINCROFT MINING COMPANY.—Notice is hereby given, that a DIVIDEND, being the Eleventh, of TEN SHILLINGS per share, has been declared by the directors of this company; and that the same will be PAID to the shareholders on Wednesday, the 23d inst., and succeeding Wednesdays, between the hours of Twelve and Four o'clock.—The certificates will be required to be left at the office two clear days, in order to be examined and marked.—44, Finsbury-square, Dec. 17, 1846.

CALLINGTON MINING COMPANY.—At a Meeting of the adventurers in the Callington Mines, held at the offices of the company, No. 44, Finsbury-square, London, on Friday, the 18th inst.,

R. HODGSON, Esq., in the chair.

The circular convening the meeting having been read, the report of the directors, with the accounts, were submitted—whereupon it was

Resolved unanimously,—That the reports and accounts be received and approved, and that the same be entered on the minutes.

Resolved unanimously,—That the extended operations of the company, with reference to the new discovery on the Kellybray lode, be referred to the directors, to take such course as they may deem fit. RICHARD HODGSON, Chairman.

The thanks of the meeting were unanimously passed to P. N. Johnson, Esq., for the services rendered by that gentleman in advancing the objects of the company.

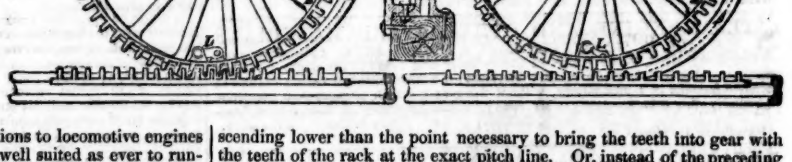
The thanks of the meeting were passed unanimously to the chairman and to the directors, for the services rendered by them in promoting the interests of the shareholders.

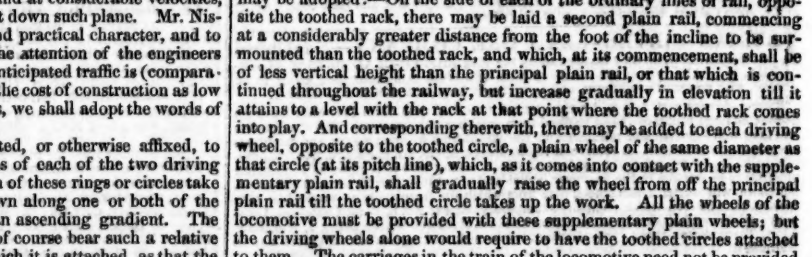
ON PROPELLING RAILWAY CARRIAGES UP INCLINED PLANES.

[NISBET'S PATENT SYSTEM.]

The idea of propelling locomotives on railways, by the help of toothed wheels working into rack rails, must be familiar to all who have paid any attention to the subject of railway propulsion: it was one of the earliest modes proposed of getting over the memorable phantasy of want of adhesion between smooth wheels and smooth rails; and it shared in the common neglect which came over all such schemes, when that phantasy was for ever dispelled, by the wonderful results of the Liverpool and Manchester competition of 1829.—It may well be doubted, however, whether it deserved all the neglect which it has experienced. No one, certainly, would have thought, after 1829, of proposing to make an entire length of railway on the rack plan; but he would not, to our thinking, have been an unwise man who had proposed to himself to ascertain, whether there might not be some difficult passes in most lines of country, where it might be partially adopted with advantage—in crossing hilly districts, for example—where gradients within the practical limits which gravity has set to the power of adhesion, can only be obtained at an enormous expense for cuttings and embankments. Indeed, we may venture, without running much chance of contradiction, to ask, whether any plan has, to this day, been proposed of overcoming steep gradients (without cuttings) which can at all be compared with this in point of general efficiency? The stationary engine and rope system, is the only other plan of the sort which occurs to our minds at this moment as worth citing; and that is so manifestly inferior to this in convenience and cheapness, as not to bear a word's discussion as a rival scheme.

Fig. 1.





The thing, in fact, which was left wanting in the rack plan, when thrown into the shade by the brilliant success of the adhesive system, was some means of using it partially; that is to say, some mode or modes of construction, whereby locomotives might have plain rails to run upon, on levels, and up easy gradients, and be enabled, without halting, to avail themselves of the tooth and rack in ascending steep inclines. Mr. Nisbet, the patentee of the invention we are now about to describe, has come forward to supply this want. He quite disclaims, of course, the mere employment of toothed wheels gearing into toothed racks as a novelty; his rights, as an inventor, he limits to the making of such additions to locomotive engines and railways, that while an engine shall be as well suited as ever to running on plain rails, it may be propelled up an inclined plane of almost any gradient, without stoppage or interruption, and at considerable velocities, or be correspondingly retarded on its descent down such plane. Mr. Nisbet's plans will be found of a very simple and practical character, and to recommend themselves more especially to the attention of the engineers and proprietors of new lines, on which the anticipated traffic is (comparatively) small, and it is of importance to keep the cost of construction as low as possible. In the description which follows, we shall adopt the words of Mr. Nisbet's own specification:—

"A ring or circle of strong teeth is bolted, or otherwise affixed, to each of the sides, or to one only of the sides of each of the two driving wheels of the locomotive engine, and the teeth of these rings or circles take into the teeth of racks, or rack bars, laid down along one or both of the sides of each line of rails wherever there is an ascending gradient. The diameter of the toothed ring or circle, must of course bear such a relative proportion to the diameter of the wheel to which it is attached, as that the pitch line of the two sets of teeth shall coincide with the sole, or bearing periphery of the wheel. It is proposed that the rack bars should commence at a distance before the actual commencement of the ascent, equal to the greatest length of any train likely to come on the railway where they are applied, and that the teeth should in these parts increase by regular gradation from a height of only a very little above the ground to a height equal to the full depth of the teeth of the wheel rings or circles, and that the teeth should at first be bevelled off on the entering side to a sharp point, and become successively less bevelled, and broader at the points, according to the increase of height. The teeth of the wheel rings will thus have fairly entered into those of the racks, and obtained a perfect hold upon them by the time their assistance is required to propel the locomotive up the ascent. The racks should be prolonged beyond the top of the ascent for a distance equal to that by which they precede the commencement of the ascent, and the teeth be graduated from the top in the same way as before. A side elevation of a length of rack on this plan is given in fig. 1. The rack bars may be laid upon separate longitudinal sleepers, alongside of those on which the rails rest; but it is preferred to make them fast to the sides of the chairs which support the rails. And these chairs may be either of the ordinary form, and the rack bars be fitted and bolted to them, or they may be enlarged and modified, so as to furnish a seat for the rack bars, as well as for the rails. An arrangement of the latter description is shown in fig. 2, which exhibits a transverse or end view of the wheel of a locomotive engine mounted on a line of rails, with a toothed circle on the inner or flange side of the wheel, gearing into a toothed rack on the inner or flange side of the rail. A is the wheel, and *a* the flange; B, the toothed circle attached to the wheel; C, the chair, enlarged on one side to furnish a seat for the rack-bar D, which is secured in its place by a countersunk bolt *d.* Fig. 3 represents an arrangement precisely similar to the preceding, only that the toothed circle and toothed rack are placed on the other or opposite side of the wheel in fig. 2; and that the toothed circle is furnished with a flange, *b.* Fig. 4 represents also the same sort of arrangement as adopted in the two preceding cases, but in duplicate; that is to say, a wheel with two toothed circles, one on each side—a rail with two toothed racks, one on each side—and a chair, enlarged on both sides, to afford support to the two racks. Where no chairs are used, and the rails are bolted directly to the sleepers, as represented in fig. 5, the rack-bar may be made of the form represented in that figure, and secured to the rail and sleeper by bolts and pins, as there shown. On those parts of rails where there are no such toothed racks as aforesaid attached to them, the locomotives will travel without the least interruption from the toothed circles, whether the toothed circles are on the inside of the wheel or on both sides; but on lines where there are numerous crossings, it will be proper to have the toothed circles on the inner, or flanged, side only of the wheel; for where there is room for the flanges to pass, there will be room for the toothed circles to pass, or, at least, room for them to pass freely can be readily made. All chance, however, of the toothed circles interfering in any way with the progress of the wheels, when out of gear with the racks, may be obviated by attaching them to the driving wheels, in such manner that they may be raised occasionally into a plane an inch or two higher than that of the rails. An arrangement for this purpose is shown in figs. 6 and 7. A is the driving wheel; B, the toothed circle, which, in this case, is made without any flange; L L L, three links, by which the toothed circle is connected to the driving wheel A, each link consisting of a bar which turns freely on two centres or pins, one of which is connected with the driving wheel, and the other with the toothed circle; M, a bar which is loosely affixed, by an eye in the centre of it, to the centre of the toothed circle, and turns at one end on a fixed centre, *m*, attached to a bearing projected downwards from the framework of the engine, and at the other to a screw-rod, S, which is carried upwards to a position within reach of the driver; N N are spokes by which the toothed circle is connected to the central boss. The eye of the toothed circle is made larger in diameter than the driving axle, to an extent equal to twice the length of the links L L; and by turning the screw rod S, the driver can lower or raise the toothed circle to that extent at pleasure. The drawing, fig. 6, shows the toothed circle as lowered, and in gear with the rack; and fig. 7 shows it as raised out of the way. P is a sling, dependent from the framework, and looped round the bar M, which prevents it from descending lower than the point necessary to bring the teeth into gear with the teeth of the rack at the exact pitch line. Or, instead of the preceding mode of enabling the toothed circles to clear the crossings, the following may be adopted:—On the side of each of the ordinary lines of rail, opposite the toothed rack, there may be laid a second plain rail, commencing at a considerably greater distance from the foot of the incline to be surmounted than the toothed rack, and which, at its commencement, shall be of less vertical height than the principal plain rail, or that which is continued throughout the railway, but increase gradually in elevation till it attains to a level with the rack at that point where the toothed rack comes into play. And corresponding therewith, there may be added to each driving wheel, opposite to the toothed circle, a plain wheel of the same diameter as that circle (at its pitch line), which, as it comes into contact with the supplementary plain rail, shall gradually raise the wheel from off the principal plain rail till the toothed circle takes up the work. All the wheels of the locomotive must be provided with these supplementary plain wheels; but the driving wheels alone would require to have the toothed circles attached to them. The carriages in the train of the locomotive need not be provided with either, but would travel in safety on the principal plain rail. An end or transverse view of an arrangement of this sort is shown in fig. 8. A represents the main driving wheel of a locomotive; A*, the small supplementary plain wheel travelling upon the supplementary plain rail; B is the toothed circle gearing into the rack D, which circle is in this case, as in the preceding, made without any flange."

From the preceding description it will be obvious that, in so far as the present invention is concerned, it will matter nothing whether the cylinders are inside or outside of the wheels. Again, as the whole of the perpendicular weight of the engine will rest, as usual, on one or other of the plain reils, and in no case on the toothed racks, the adhesive power or grip of the wheels will remain throughout the same as before, and the teeth will only come into action when required, to prevent the slipping or undue acceleration of the wheels.—From the *Mechanics' Magazine.*

THE METALLURGICAL TREATMENT OF ORES.—No. XII.

To commence a distillation, a certain quantity of the dry amalgam (generally about 5 cwts. for each furnace) is placed on the plates; the lower plate is the largest—so that, if any of the amalgam fall from the upper plates, it will receive it. When things are thus arranged, the iron bell (mentioned in our last paper) is lowered on the tripod by means of a chain: the bell is surrounded by a ring of iron, which rests on the bottom of the furnace, in order that, when heat is applied, no fuel may fall into the vat below. The furnace is heated with turf; and, as soon as the bell is red hot, the mercury commences volatilizing. The vapour not being able to escape, passes into the vat filled with water. The noise produced by the falling drops of mercury having ceased (this takes place in about seven or eight hours), the operation is finished. As soon as the bell is cold, it is raised by means of the chain, and the plates charged with the porous metallic residue removed; the wooden vat under the hearth is then removed; the water poured out, and the contained mercury cleansed by a sponge: the metal is then poured into the stone trough, in the amalgamation room, and is ready for another operation. If the heat employed in the operation has not been too great, and the distillatory bell has not cracked, the loss of mercury is very little—scarcely an ounce in the cwt. The alloy produced by the distillation of the amalgam contains—silver, 69·00; copper, 28·20; lead, ·73; nickel, ·34; arsenic, ·40; antimony, ·30; mercury, ·20—total, 99·17. In this alloy, the proportion of copper is not a constant quantity; and it has been observed, that the alloy produced from the amalgam, which runs directly from the amalgamation tuns, is less cupreous than that produced by washing the schlichs or slimes. The following are comparative analyses:—Alloy from the amalgam of the tuns: silver, 83; copper, 17—100. Do. of the slimes: silver, 33; copper, 67—100. —100 cwts. of amalgam generally afford from 14 to 15 cwts. of "metal." The alloy of silver, copper, &c., extracted in this manner being termed metal. The quantity of fuel consumed in distilling 5 cwts. of amalgam is about 70 cubic feet of turf, and 14 cubic feet of wood charcoal. The distillatory bell generally lasts about 230 operations.

9. *Fusion of the "Amalgamation Metal."*—The silver remaining on the distillatory plates does not possess an uniform richness. It has to be fused in large black-lead pots, capable of containing at least 2 cwts.: from these pots the metal is poured in rounded iron shovels, each containing from 20 to 25 lbs.—at the same time, a small quantity is granulated in water. These granules are assayed by the cupel, in order to ascertain how much fine silver is contained in the metal, generally from about 60 to 76 per cent. The silver is run into ingots, cleansed by a brass wire brush, and sent to the mint at Dresden. Up to 1826, the metal thus obtained was refined with lead, and then cupelled, until it realised a standard of 0·985ths. In 1827, the amalgamation metal was attempted to be freed from copper by sulphuric acid, by first heating to redness in a reverberatory furnace to oxidise the copper, and then digesting the roasted metal with dilute sulphuric acid, in a leaden boiler, at a temperature of from 180 to 200°. It was then fused in crucibles, as usual. It contained about 0·970ths of fine silver. In another place, this process will be again noticed. The results obtained were good; but, nevertheless, the method was abandoned. The furnaces employed in the fusion of rough silver are furnished with condensation chambers, in which are found certain metallic products, which have been carried over. Their composition is as follows:—Charcoal, 41·32; ash, 29·20; silver, 18·10; arsenious acid, 2·45; oxide of antimony, 2·00; oxide of lead, 9·12; oxide of copper, 1·00; mercury, 1·70; alkaline salts, 1·75—total, 98·44.

10. *Washing the Residual Matters.*—The residual matters are washed, to extract from them small quantities of argentiferous and cupriferous amalgam, which may be yet found in them. In order to accomplish this the tuns are emptied, their contents placed in the washing vats, and diluted with water, so that any particles of amalgam may fall to the bottom. In order to accelerate their fall, the mass is constantly stirred with an iron rake. To ascertain if the upper part of the deposit is free from mercury, each vat is provided with three holes, capable of being closed by wooden plugs. After the movement in the vat has been kept up for some hours, the upper plug is removed, and a portion of the contents taken out for assay. If no globules of mercury are to be seen, the whole of the upper part of the residue is drawn off to the upper hole. The second is then opened, and the same process observed to the last; and the amalgam, which is generally very cupriferous, remains at the bottom of the vat, and is removed once a month. It contains 88 per cent. of copper, and 7 to 9 per cent. of silver. The amalgamation water, which contains all the soluble salts produced in the roasting, or amalgamation, properly so called, contains as follows:—Sulphate of soda, 6·9; common salt, 1·5; chloride of magnesium, 0·9; ditto of manganese, 3·6; water, 86·7—total, 100·0. This liquid, examined by M. Berthier, was, doubtless, deprived of its salts of iron, by exposure to the atmosphere—for, in recently prepared solutions, much chloride of iron is found.

The American Amalgamation.—The amount of silver produced from the European is so insignificant in amount compared to that of the American mines, that the processes employed at the latter are most especially worthy the attention of metallurgists. This method of amalgamation was not known before the conquest of America. It was discovered in 1561, by Hernando de Velasco, who introduced it into Peru. A little time after, two modifications were proposed, which have not generally been adopted. The one consists in introducing iron into the mass to be amalgamated, and the other the application of heat, in order to accelerate the process. The first modification tends to economise the mercury; the second increases its consumption. These processes will, however, be more fully discussed hereafter. In America, the amalgamation process is carried out with much poorer ores than at Freyburg. The mines are generally situate at a considerable elevation—consequently, wanting an easy means of communication with the neighbouring country, so that fuel cannot be obtained, excepting at a very considerable cost; so that the American miners have had a most difficult problem to solve: this, however, has been accomplished by means of patience and experiment. M. Bousingault has given a description of this process, which, however, differs in many particulars from those we had before received. The present is, however, more entitled to belief, inasmuch as M. Bousingault has had the advantage of possessing a considerable metallurgical knowledge, which the parties on whom we before depended for such information had not. The following is a digest of his description:—The ores intended for amalgamation are, without any previous washing, stamped dry; they are then ground with water, in a machine termed *arrastre*, until they are reduced to a very fine state of division: this condition is indispensable. The arrastre consists of a cylindrical pile of masonry, from a foot to 18 in. high, and 12 ft. in diameter. This building is surrounded by planks, the length of which is such that they rise about a foot above the masonry, so as to form a tub or vat of very considerable diameter, but very shallow. The bottom of this tub is paved with hard stones. From the centre rises a vertical arm, which rests and turns on a plate, fastened to the ground. At about 2 feet above the vat, the arm has passed through it, at right angles, two pieces of wood, so that four cross arms are formed, to each of which a large block of stone is fastened by leathern straps. These stones are so arranged, that each part of the surface of the bottom of the vat is successively passed over by them.

This process of grinding is very similar to that made use of in England, in preparing clay, &c., for fine earthenware; such a machine has also been in use for many years at the porcelain works at Sevres. The stamped ore is placed in the arrastres with water, and about 24 hours are required to grind from 6 to 8 cwts. of ore. The workman, superintending this operation, moistens the mineral from time to time, so as to keep it of a proper consistency—it ought to be a very liquid mud. When the grinding is finished, the liquid mass is taken from the arrastre, and placed in a suitable situation for drying. When the metallic mud has acquired a suitable consistence, it is delivered over for working in the *patio*. The patio is a kind of court-yard, paved with flag-stones, placed at a slight inclination, so as to give the whole a little fall, to allow the rain water to flow off. If the ground ore has to be trodden by men, it is formed into heaps (montons), of from 15 to 20 cwts. each; if by mules, into larger heaps, termed *tortas*, which contain from 800 to 1200 cwts. of ore. The ore, thus placed in the patio, is ready to receive its dose of salt, magistral, and mercury—ingredients with which it is successively treated. The dose of salt varies from 1 to 5 per cent., according to the purity of the salt and the nature of the ore. The surface of the torta is sprinkled with the salt, the mass is then trodden by mules for about 6 or 8 hours, to ensure a complete mixture. The torta, after having received its dose of salt, is left for many days; the magistral and mercury is then added. The choice of a good magistral is a most important point in the amalgamation: it is generally prepared by roasting pulverised copper pyrites in a furnace. When the mass is well heated and inflamed, all the furnace openings are closed, and the whole left to cool till the next day. M. Bousingault has found in a good magistral 10 per cent. of sulphate of copper. When copper pyrites cannot be procured, iron pyrites, mixed with metallic copper, or any copper ore, are roasted together. Lastly, in some places the magistral is obliged to be prepared with iron pyrites—a product of bad quality is thus obtained, of which a much larger quantity must be employed, than of the copper magistral. According to M. Bousingault, it seems to be admitted, by every one conversant with the process, that, to obtain a complete amalgamation, a magistral sufficiently rich in sulphate of copper must be employed. He also adds, that in some works, where cupreous matters cannot be obtained, they prefer to import sulphate of copper itself direct from Europe. The proportion of magistral varies from half a pound to a pound for each cwt. of ore. When the magistral is added, the mules commence treading the mass, so as to well incorporate all the materials, before the addition of the mercury. The quantity of mercury added is in proportion to the amount of silver the ore contains; about six times the weight of the silver must be employed. The mercury is divided into three portions, which are introduced at three different epochs of the operation. After the addition of the first lot, the mules tread the mass for six hours, so as to divide the mercury and magistral as much as possible. The following day the amalgamater examines the ore, by washing a small quantity, and examining the appearance of the separated mercury. It is known, by this examination, whether the operation proceeds well or not. The surface of the mercury is slightly grey, and somewhat dull, and the globules unite readily into one single mass when the operation has been well made. On the other hand, if the mercury is much divided, of a deep grey colour, and rising in the water under which it is rubbed, too much magistral has been employed, and quicklime must then be added: in the contrary case, magistral must be added. This first lot of mercury changes, in from 10 to 15 or 20 days, more or less, into a nearly solid amalgam of silver, which is brilliant, and so divided, that at first sight it might be taken for silver filings; the second and third part of the mercury is then added, and a new treading is performed by the mules, after which the mass is left for several days, and then again trodden. When the atmospheric temperature is above 68° Fah., two or three triturations in eight days suffice to transform the second quantity of mercury into nearly a solid amalgam.

When the amalgamation seems finished, which sometimes does not happen for two or three months, the third lot of mercury is added, and the mules are again put in for two hours. This last addition of mercury is called the bath, and has for its object the rendering the solid amalgam, first formed, as liquid as may be, and of favouring its collection into one mass, which much facilitates the washing. After having received the bath, the amalgamated ore is carried to the washing vats. The metallic slime is washed in large vats. Some inches above the bottoms of the vats two holes are bored—these can be closed by plugs. One hole is about 3 in. in diameter, and the other about ¾ in. Each vat is also furnished with a stirring apparatus, very like that in use in the mash-tubs of our large breweries and distilleries. At the commencement of the washing this stirring apparatus, or "agitator," is put in motion so rapidly, that the whole of the slime is suspended in the water. After a little time, this rapidity of motion is diminished; the plug is taken from the small opening, and the mere slime in suspension in the water is examined, to see if it contains mercury—if not, the large plug is taken out, and the whole run off as rapidly as possible. At the bottom is found the mercury charged with silver; it is collected, strained in fine canvas bags, and the solid amalgam taken to the distillatory apparatus. Such is the practice of the American process of amalgamation; in our next week's paper its theory will be horoughly discussed and considered.

ON THE APPLICABILITY AND ECONOMY OF COAL GAS.

LECTURE II.—BY T. A. HEDLEY, ESQ.

In my last lecture [see *Mining Journal*, Dec. 5], I brought under your notice some of the earliest incidents of gas lighting, and pointed out the very interesting discoveries respecting it, by eminent and ingenious men of a bygone day. I demonstrated, also—and I hope satisfactorily—to whom its introduction was due, and showed that its economy and its applicability was entirely the result of the knowledge, science, and industry of Mr. W. Murdoch, of Redruth, in the adjoining county. I showed, also, some of the many difficulties it had to encounter before it could be brought into its present practical and useful state of perfection. Many years elapsed after its first introduction to the metropolis before it began to be in any favour with the public, or even with scientific men, from its having, unfortunately, been commenced by parties not sufficiently qualified for so important an undertaking. After a lapse, however, of some 12 to 15 years, it did begin to excite attention, and made in consequence some useful progress; but scientific men stood aloof from it, until as late as the year 1818 or 1819, at which period a patent was taken out by the well-known and talented engineers, Messrs. Taylor and Martineau,* of London (Messrs. Taylor of this and the adjoining county, and the celebrated mining engineers), for making gas from *oil* instead of coal, which gas was so vastly superior, and so much more science was brought into the field, that scientific and learned men were induced to notice and investigate its merits; learned and royal societies took up the matter, and papers and disquisitions of a most valuable and interesting nature were constant and numerous on the occasion.

The superiority of the illuminating power of oil gas, first sounded the tocsin for this scientific conflict, and brought to it, either in aid of the one or the rescue of the other, the greatest men of the age, either as scientific, literary, mathematical, mechanical, or otherwise—such men, indeed, as Sir Humphrey Davy, Dr. Dalton, Dr. Henry, Dr. Thompson, Dr. Fyffe, Dr. Ure, Dr. Wilkinson, Professors Brande, Cooper, Herapath, Ricardo, Daniell, Fairey, George Lowe, Esq., and many others. Even Sir Walter Scott took part in this scientific controversy. Abbotsford was lighted by an apparatus of its own with oil gas; and Sir Walter presided at a public meeting in Edinburgh, held for the purpose of introducing oil gas into that city, and took a prominent and important part in the proceedings. Great interest and great excitement were at this time created on the relative merits of oil and coal gas, as to their respective illuminating properties. Severe contests in Parliament took place, and very large sums were expended on both sides in support of each particular interest; and so much conflicting testimony was given as would have justified the late Lord Chief Justice Abbott (afterwards Lord Tenterden), in exclaiming, "Alas! poor science."† However, after some years trial, oil gas—beautiful as it undoubtedly was, and is—was forced to give way. Many large cities and towns were lighted by it by companies, established for the purpose, and the apparatus of the patentees employed. The towns lighted were—Bristol, Norwich, Liverpool, Hull, Dublin, part of London, Colchester, Taunton, Cambridge, and several others—Covent Garden Theatre, London Institution, Argyle Rooms, St. Petersburg, &c., &c. Its production was, however, found to be too costly to compete with its more cheaply-produced competitor, coal gas; and, after the interest and excitement of the scientific part of the subject had worn off, it began rapidly to retrograde, and expedients were resorted to for diminishing its cost, at the expense, however, of its illuminating quality; and, after all, with many, certainly very valuable, aids, as scientific substitutes for oil, it was obliged to surrender, and give place to its more common competitor "coal gas."‡

It may not be out of place here to remark, that oil gas gave rise to the company established in London, called the "Portable Gas Company," which sent its gas out in *carts*, by means of small cylindrical, or rather eliptical, vessels—the gas being compressed therein by means of a steam-engine to the enormous pressure of from 15 to 30 atmospheres. Ingenious and beautiful as this was, it also failed; but only from the cause before named—that of the greater expense of oil over coal; and the concern, after struggling for some years, was obliged to yield to the fate consequent upon unproductiveness, and was obliged to be abandoned. My father, though a coal gas engineer, burnt this portable oil gas in his house, and for two reasons—the one, its superiority; the other, desirous to give it encouragement—thereby, if possible, to keep it in existence, so approvingly did he estimate its merits.

The controversy between oil and coal gas has not been without its advantages. Oil gas having enlisted into its ranks men of science, speedily induced the following the example by those interested in coal gas—and which, from that period, began to make important strides towards improvement, and so as to lessen considerably the previously existing differences between the two gases—and much has been accomplished in this way; but there is no doubt that all the science brought to it, and improvement effected, is mainly attributable to the introduction of oil gas. I noticed, too, in my last lecture, that gas lighting had given rise to that beautiful and humane discovery of Sir Humphrey Davy, the "Davy lamp;" and it will not be out of place here, if I now state some of the other benefits which have resulted to the world at large by Mr. Murdoch's important discovery. The celebrated and well-known article of Mackintosh's waterproof cloth is one. The product of the distillation or manufacture of coal into gas is naptha or coal oil; this was found by Mr. Mackintosh (an able chemist) to possess the invaluable property of dissolving *India-rubber* (caoutchouc)—a desideratum that scientific men had been seeking for ages, from its great importance in the arts and manufacturers; and the knowledge and use of this property has given rise not only to the rendering cloths waterproof, but to the innumerable uses to which India-rubber, in a solven tstate, is now applied; and amongst other elastic contrivances to which it is applicable, we have rather a curious one, superseding the lawyer's red tape—and it may now truly be said, he ties up his papers by a "gas tape."‡

We have next the application of gas to lace-making. Messrs. G. F. Urling and Company took out a patent for this invention, and which has been wonderfully successful and productive. The operation is this: instead of running the *lace* over a *red-hot iron roller*, as heretofore, it is drawn over or through a gas flame; and the superior effect desired, of entirely freeing it from the flew or flough of the thread, is attained, as the flame of the gas actually passes into the meshes of the lace and most perfectly accomplishes the object, and in an extremely beautiful and effective manner.

Hot-blast, too, for smelting iron, may be said to be another attribute of the knowledge of gas; for its inventor, the talented J. B. Neilson was the engineeer and manager of the Glasgow Gas-Works; and, in that capacity, made, in conjunction with the late Mr. Mackintosh, a great number of experiments—not only with reference to his water-proofing, but also to carbonising iron, by means of gas tar, and thus converting it into steel; and there can be little doubt, that during some of these experiments, the idea was created of applying heated air to the making and smelting iron, now of such vast importance and consequence to the country. There are other applications, too, of gas—such as motive power to a steam-engine, patented by Mr. Brown—and the practical acquaintance with it has led even to the introduction of the atmospheric railway—Pinkus and Clegg, the originators of this principle, being both gas engineers. Thus, we may exclaim with the poet—"What mighty ends from minor causes spring." We have also, in addition to all these, the beautiful, and now well-known, adaptation of the power of gas to the interesting instrument the "oxyhydrogen microscope," as well as the celebrated "Drummond light," from the late lamented Capt. Drummond. Before quitting the subject of the production of gas, I must not omit to state, that after the patent for making oil gas, patents were taken out for making gas from coal tar, resin, and many other substances, and, amongst the rest, for making gas from water. Professor Donovan, of Dublin, took out this patent. He decomposed the water by means of heat, securing the hydrogen thus set free. He then passed this hydrogen over naptha (a product of coal and coal tar), and thus gave to it a sufficient quantity of carbon, to enable it to yield in combustion that quantity of illuminating power it stood, as hydrogen gas, in need of; and thus, in fact, in this way forming carburetted hydrogen, or coal gas. This patent was purchased, I believe, by one of the principal London gas companies; and some few years afterwards again became the subject of another patent for napthalising, as it is called, the weaker gas from coal, by which the illuminating power of it is greatly increased, and brought more nearly on a par with oil gas. This patent is the property of George Lowe, Esq., the talented and respected engineer of the Chartered Gas Company of London. Before quitting the subject of the manufacture of gas, it is right to mention, that many persons have assisted, and that greatly, in bringing it to its present state of perfection; and many patents for its purification, &c., have been taken out—amongst these must be mentioned, as foremost, the names of Clegg, Reuben, Phillips, of Exeter, Malam, Grafton, Perks, Palmer, Brunton, Croll, Johnstone, and many others—to all of whom coal gas is much indebted.

I come now to the more immediate subject of the lecture—ARTIFICIAL LIGHT—and the most approved modes of obtaining it; and I will commence by calling attention to the important information handed down to us by those learned philosophers and eminent men, who have helped us to acquire our present knowledge, have left us the way to practise and describe it; and foremost in this rank I must mention "Count Rumford," who has taught us, by a very simple method—that of the intensity of shadows—*to measure the actual quantity of light given out by the combustion of any inflammable material*; and he has, moreover, taught us—and which is, indeed, most important and valuable to know—that, simply by uniting two or more flames into one, instead of burning them separately, a great increase of light is obtained—as, for example, uniting the flames of two candles, light will be produced equal to three; and uniting a larger quantity of flames, as in the case of the "Argand" burner, the light will be increased in a much greater ratio. M. Argand, from whom the "Argand" burner takes its name, requires to be specially mentioned on this part of the subject: he was an eminent French savant; and he discovered, in addition to what Count Rumford has laid down of the value of uniting jets or flames, that for the thorough combustion of oils, or other means of obtaining artificial light, a large quantity of oxygen (one of the constituents of our atmosphere) is required: to obtain this, he, by a simple and inexpensive process, contrived this burner, with a *center aperture*, similar to the one I hold in my hand. The intention of this mode of construction is to bring a larger quantity of the oxygen of the atmosphere to the burner, so as to feed the flame, and thus bring about what is so essential, perfect combustion—be it oil, camphine, naptha, or any other material: the interior and exterior of the flame, it will be noticed, are, by this contrivance, both exposed to the influence of the air; and thorough combustion is not only effected, but the intensity or vividness of the light is greatly increased—the value or illuminating property of any commodity in combustion depending entirely on the more or less perfection of this principle.

The Argand burner, however, although beautifully accomplishing this desideration, and heretofore very generally used for gas, is not so valuable or proper for gas as it was and is for the combustion of oil—inasmuch as oil being much more dense, and containing a much larger quantity of carbon, requires more air or oxygen for its combustion. Several writers and professors of our own time have beautifully illustrated this principle of combustion, and also the means by which the intensity of any light can be ascertained with precision and certainty. Professor Leslie, Drs. Brewster, Thompson, Ritchie, Christison, and Turner, Sir J. Robinson, Wheatstone, and Dr. Adam Anderson, and others, are conspicuous for the services they have rendered in this respect; and they have made the subject, which would at first sight appear intricate and difficult, perfectly easy and comprehensible—if not, indeed, quite simple.

The difference arising from the mere construction or form of burners has been shown to be extraordinarily great, by evidence given before committees of both Houses of Parliament, as published in Dr. Ure's *Dictionary of Arts, Manufactures, and Mines*. By the tables of results therein, it will be seen that, whilst one burner required 2678 cubic feet of gas to give a given light, another burner required only 1282 cubic feet to yield the same amount of light: this great difference being mainly and essentially brought about by Count Rumford's principle of the amalgamation of the jets or flames producing the light, the single jet, for example, consuming the 2678 feet of gas, giving the *least* light in proportion to its expenditure of gas; and the large "Argand," that consuming the 1282 cubic feet, giving the *most light* for the *least* expenditure. [The lecturer here exhibited a great variety of burners in shape, size, &c., and explained their relative merits—all founded, however, on the two principles just adverted to, of "Count Rumford and M. Argand"—of combination of flame and influence of atmosphere; and he stated that these two, separately or combined, gave rise to all the contrivances and recent introductions of the BUDE (Goldsworthy Gurney), Boccius, and other so-called improved burners, all of them depending essentially on the principles described.]

* Mr. Martineau was brother to the highly-gifted Harriet Martineau.

† This memorable phrase, it will be recollected, took place on the trial of the great sugar cause of "Severn and King."

‡ The lecturer exhibited specimens of these in the room.

[To be continued in next week's Mining Journal.]

TUNNELLING THE ALPS.—The *Moniteur Belge* announces that experiments have been made within the last few days, in order to test the efficacy of a machine, just invented, for the purpose of effecting a new and speedy method of boring tunnels. It is proposed to apply this machine to the construction of the great tunnel about to be commenced in connection with one of the Italian lines. This machine was placed in front of the web, and effected a bore to the depth of 18½ centimetres in 35 minutes. At this rate the new invention will complete upwards of 5 metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success.

SUPPLY OF COAL AT STAMFORD.—It seems probable that there will be in future considerable competition in the coal traffic at Stamford, and that the public will be supplied by a different class of persons from those who have hitherto carried on the trade. Since the announcement that the Eastern Counties Railway Company had determined to convey coals along the line, there have been numerous applications at the Stamford station relative to the rate of charges and the wharfage accommodation; and it is understood that several tradesmen, such as druggists, drapers, grocers, maltsters, &c., are entering into arrangements to deal in the article. Part of the supplies are expected from Lynn by way of Ely, but it is thought that the greater portion will come from the Thames along the Blackwall and Stratford line. It seems that coals unshipped at Blackwall avoid the London port dues, which are exceedingly heavy, and thus Wall's End coals can be sold in Stamford at a lower price than in the metropolis, although the colliers bringing them reach within 10 miles of London. It is calculated that Yorkshire coals may be delivered here for 17s. or 18s. a ton, and Newcastle for 21s. or 22s. The trade in Leicestershire and Derbyshire coals will be almost destroyed until the railway be opened from Stamford to Syston.—*Stamford Mercury.*

THE PACKET-SHIP "SARAH SANDS."—The splendid new packet-ship *Sarah Sands*, built of iron, and with auxiliary screw power, has been tried twice in the dock, and will, in a few days, go into the river; after which, if the machinery is all right, she will be sent to sea for two or three days' cruise. She is fitted with unusual splendour, even for a packet-ship, and has room for about 1000 tons of goods, besides her coals. She will be at once placed on the station, and is expected to sail about the 15th of next month. The *Sarah Sands* was built by Messrs. James Hodgson, engines by Bury, Curtis, and Kennedy, on Mr. Grantham's direct action principle, who also designed and superintended the ship, with the assistance of her experienced commander, Capt. W. C. Thompson. —*Liverpool Standard.*

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Glossary of Foreign Mining Terms.

In compliance with the request of several correspondents, we lately commenced the publication of a complete series of technicalities used in English and Foreign Mining—in fulfilment of our promise, those of Cornwall and Derbyshire are completed; and we now continue the terms used in

SPANISH MINING.

Oro—Gold.
Oro de copela—Fine gold.
Oro empolvado—Gold dust.
Orphimento—Oropimente—Orpiment.
Pacos—Earthy ores, consisting of oxide of iron mixed with various ores of silver; when of a red colour they are frequently called colcorados; they are generally found near the surface.
Paja—Straw.
Pala—A wooden shovel.
Paldion—Palladium.
Palanca—A lever, a pole on which a weight is supported by two men.
Palanca de hierro—Crow bar.
Palmo—Quarter of a vara, or Spanish yard.
Panino—The ground or country through which the lode runs; also, the matrix.
Panizo—Hornstone.
Parada—A relief or change of men, mules, or horses.
Parcionero—A partner in the mines.
Parihuela—A letter.
Partido—Division of ores between the owners and buscones.
Pasta—Uncoined silver or gold.
Patio—A yard, court; floor of a court on which the ores pass through the process of amalgamation.
Patio de amalgamacion—Amalgamation court.
Pegador—Man who sets fire to the matches for blasting.
Pella—The silver mixed with quicksilver when all the latter metal has been forcibly pressed out, except the portion which can only be separated by distillation.
Peltre—Pewter.
Peones—Native labourers or assistants; day labourers.
Pepena—Picked ore of the best quality; rich ore.
Pepenado—Cleaned ores.
Pepenadores—Cobbers, cleaners, and classes of the ores.
Pepitas—Small grains of native silver or gold.
Peritos—Intelligent or practical persons selected as arbitrators to decide scientific or practical questions or disputes, or to determine the underlay of veins prior to fixing the limits of the *pertenencias*.
Perla margarita—Pearl
Pertenencia—Extent of 200 varas upon the course of a lode to which a title is acquired by denunciation; the breadth varies according to the underlay of the vein from 112½ varas to 200 varas.
Peso—A dollar; any weight.
Petlanques—Crystallisations of silver ores; also, silver ores which are very conspicuous in the matrix; for example, petlanque colorado is the red antimonial silver, whether crystallised or otherwise.
Pez—Pitch.
Pico—A miner's pick.
Piedra—Stone.
Piedra de toque—Touchstone.
Piedra cornea—Hornstone.
Piedra iman—Loadstone.
Piedra podrida—Rotten stone.
Piedra pomez—Pumice stone.
Piedras de mano—Good pieces of ore, sometimes carried up by hand, and often assigned to pious purposes.
Piedras preciosas—Precious stones.
Pilares Pilarejas—The pillars of a mine.
Pileta—A trough; the hollow basin before the smelting furnace into which the metal flows; tank or small reservoir underground to collect the water of infiltration.
Pina—The cake of silver left after the quicksilver has been distilled off.
Pinta—The appearance, whether favourable or unfavourable, of a fragment detached from the lode; the mark of particular metals by which their value is recognised according to their appearances to the eye.
Pintar—To exhibit pintas, or indications of ores.
Pirites—Sulphuret of iron.
Piso—The bottom or floor of a work.
Pison—A rammer.
Pita—Thread made of the fibre of the agave or maguey.
Pizarra—Slate.
Plan—A bottom working, or working driven from the bottom of a level adit, &c.
Plancha—Pigs, as *plancha de plomo*, pigs of lead.
Plata—Silver.
Plata de ley—Standard silver.
Plata pina—Silver after distilling off the mercury.
Plata parda azule y verde—Muriate of silver of different colours.
Pleito—A law suit.
Platina—Platinum.
Plomo—Lead.
Plomosos—Applied to ores containing lead.
Poblar—To set on workmen in any mine.
Polvillones—Rich ores.
Polvillos—Applied to ores, tender, rich.
Polvillos buenos—Good ores of the kind.
Polvo—Dust
Polvora—Gunpowder.
Polvorilla—Black silver, disseminated sulphuret of silver.
Porfido—Porphyry.
Potasa—Potash
Pozo—A sink on the inclination of the vein; a pit, a well.
Presa—A dam.
Pretocolo—Minutes.
Pueble—Actual labour in the mine, with the number of workmen at least prescribed by the mining laws.
Puertas—Very strong rock which conceals the vein, and which requires blasting ere the vein is discovered; also doors.
Pulgada—An inch.
Quadrado—A square.
Quajado—Dull lead ore.
Quarzo—Quartz.
Quebrada—A ravine.
Quebradores—Cobbers or breakers of the ores; men who break up the ores on the surface.
Quemadero—Burning house or place.
Quemazon—The barren scorched appearance of the crest of a metalliferous lode protruding the surface of the mountain.
Quilate—Synonymous with carat; for example, gold of 22 quilates contains $\frac{22}{24}$th parts of pure gold, just as the English standard gold of $\frac{22}{24}$th parts of pure gold. The quilate is divided into 4 granos Span.
Quintal—4 arrobas, or 100 lbs. Spanish, equal to 101 $\frac{44}{100}$ lbs. English.
Quita pepena—A man who stands at the mouth of the shaft to see that none of the metal is stolen.
Ramo—A branch from the main vein.
Rancho—A detached farm house and ground; the house is often nothing more than a hut.
Raya—Weekly account of the mine expenses.
Rayador—Clerk who keeps account of the workmen's time, the stores received, &c.
Real—$\frac{1}{8}$th of a dollar; a mining district.
Real de minas—The term generally applied to a mining district; although mineral de minas is also now used.
Reata—A rope about as thick as a finger, or larger, used as lashings to *cargas*.
Reatilla—A single twisted smaller rope.
Rebaxe—A working down of high ground.
Rebultura—A mixture of the ground ore with the usual reagents or fluxes.
Rebosadero—Crest of a vein.
Recina—Rosin.
Recuesto—Inclination of a vein.
Regador—One who has a right to a certain share of water for irrigation.
Registrar—To get an entry made by the proper officer of a party taking possession of a new mine.
Registro—An entry as above described.

Mining Correspondence.

ENGLISH MINES.

BARRISTOWN.—The 18 fm. level end, west of flat-rod shaft, is greatly improved since my last, producing, at present, 1½ ton per fm.; in the 18 fm. level end east we have no lode at present; we intersected another slide in this end, which cut off the lode. The lode in the 12 fm. level end west is producing about three-quarters of a ton per fm.; the lode in the rise, in the back of this level, still produces good stones of ore. The 24 fm. level end, west of the engine-shaft, is at the present time suspended; we commenced to drive a cross-cut work from the end, to communicate with Dane's shaft; this will unwater the western ground to the 24 fm. level, and prove the lode we are raising the ore on eastward. We hope to have another cargo of ore ready, of 40 tons, about the middle of January, unless the Christmas holidays should make too great an inroad on us.—T. ANGOVE: Dec. 19.

BEDFORD UNITED.—At Wheal Marquis, the lode in the 80 fm. level east is 18 in. wide—good saving work. In the 70 fm. level east the lode is 18 in. wide—good work. The lode in the 58 fm. level east is 18 in. wide, composed of spar, mundic, and spots of copper ore in places. At Wheal Tavistock, the lode in the 47 fm. level east is at present small—principally mundic and ore; in this level west the lode is 18 in. wide, composed of mundic and ore. In the 35 fm. level east the lode is without alteration. The south engine-shaft is 22 fms. 3 ft. 6 in. under the surface; lode 6 ft. wide, gossan and spar, with stones of ore in places. The lode in the adit level east is 18 in. wide, gossan, flookan, and spar.—J. PHILLIPS: Dec. 22.

BIRCH TOR.—In presenting you with my report of this mine, I beg to say the engine-shaft has been sunk about 5 fms. below the 62 fm. level; the lode, although a moderate size, and of a promising character, is poor; the ground is good for sinking, and, judging from the present appearances in the shaft, it would take about two months to sink it to the 74 fm. level. The 62 fm. level has been driven east about 7 fms. through a tolerable lode of tin, but the end is now poor. The 50 fm. level east has been driven, since cutting the lode on the east side of the cross-course, about 5 fms.; the lode has produced some good stones of tin; but, as a whole, it has been poor, and still continues so. The 18 fm. level, east of the engine-shaft, has been cleared 16 fms., but it is not yet cleared to the end. The plat has been cut at the 11 fm. level, at Goppey's shaft, and the shaft sunk 3 fms. below the said level; the lode here, for the first 2 fms., was poor; but it is now producing some tin, and has a promising appearance. The middle adit level has been driven east 2 fms. through a lode, worth about 7*l.* per fm. There is still tin in the end, but it has been suspended for a month, in consequence of the tributers working in the back—this level will now again be resumed; the winze, in the bottom of this level, is suspended, in consequence of the water being too much for the men to work conveniently; the lode is producing some tolerably good tinstuff—this can only be got at by driving the deep adit east. The 11 fm. level, east of Goppey's, and the deep adit, east of Prideaux's shaft, have not been driven. These places have been reserved for the men working in the lower levels in case they should be hindered by water through the severity of the weather stopping the engine-wheel. This, I am sorry to say, has now taken place—therefore, the engine-shaft men, and the men from the 62 and 50 fm. levels will be removed to those places. We have now 11 pitches working at tributes, varying from 5s. 4d. to 10s. 8d. in the 1*l.* The Vitifer deep adit is progressing very slowly; it has been found impossible to go any further with the old level, without running a great risk of filling it again back to the shaft; we have, therefore, thought it advisable to drive a new piece by the side of the old one—it is now about 14 fms. from the lode; and, if the ground continues as it is, it will take from 10 to 12 weeks to accomplish it. Although the ends are at present looking poor, the mine, on the whole, is much the same as at the last meeting; and I believe, if the winter is not very severe, we shall raise tin enough to pay cost.—R. EDWARDS: Dec. 14.

CONSOLIDATED TRETOIL.—The lode in the 80 fm. level east is 1 ft., wide, saving work; opening ground that will set at a moderate tribute—this end has improved since last reported. In the winze, coming down from the 70 the lode is 1 ft. wide, producing good stones of ore; we have not cut the lode to the east of the cross-course at the 70 fm. level, but hope to do so about the end of next week. We have cut a lode in the 40 cross-cut underlaying north, something more than 2 ft. in 1 fm., it is 18 in. wide, composed of yellow ore and spar, a kindly lode, letting out much water—we have only this day cut through it; this lode underlays something more than the Mine Park lode at the adit—the distance of which, from the present end, according to what has been seen in the adit, is about 8 or 9 fms. further south; we shall open on this lode, which at present will set at a moderate tribute, and, at the same time, push on the cross-cut as fast as possible.—H. WILLIAMS.

CUBERT SILVER-LEAD.—The sumpmen have been engaged this week in casing and dividing the engine-shaft from the 25 to the 35 fm. level, and which is now finished. At the 25 fm. level, driving west, the lode is 1 ft. wide, producing good saving work for lead (for that size); at this level, going east, the lode is still unproductive, although a very kindly looking end, and we expect soon to cut lead. At the 15 fm. level east we have as large and promising gossan as can be seen, and yielding rich stones of lead; going west, at that level, we are still passing through good tribute ground—a promising level indeed. The tribute pitches on the whole are looking favourable—one in particular, working in the back of the 25 fm. level, west of the engine-shaft, has greatly improved, and the party (4 men) will raise several tons of ore. I have much pleasure in saying, that the mine never looked so well as at the present time. —RICHARD ROWE: Dec. 18.

EAST CROWNDALE.—The appearances of this mine are pretty much the same as when last reported; there not having been much work done in breaking ground the last four days—the men being employed in dropping the plunger lift in our new engine-shaft, which is completed, and answering most satisfactory. This alteration in our pitwork has taken longer to finish than we first anticipated, owing to the unusual severity of the weather. I have set the stopes east and west of the winze, below the 20 fm. level east, on tribute, to six men, at 12s. out of 1*l.*—the takers to pay every expense in making the ore marketable.—S. PAULL: Dec. 19.

EAST TAMAR CONSOLS.—At Whitson, the ground in Hitchins's shaft continues hard for sinking. In the 54 fm. level north the lode is 2 ft. wide—a very promising lode; in the 54 south the lode is 20 in. wide—saving work. In the 46 south the lode is 1 ft. wide, fluor-spar and silver-lead ore. At Furzehill, the lode in Harrison's shaft is 2 ft. wide, producing work of a good quality. In the 38 fm. level south the lode is 20 in. wide—saving work; in the 38 north the lode is 2 ft. wide, fluor-spar and silver-lead ore. In the 3 south the lode is 2 ft. wide—saving work.—B. ROBINS: Dec. 22.

GREAT MICHELL CONSOLS.—The engine-shaft is now down below the 22 fm. level 4 fms., in ground a little more favourable for sinking. In the 22 fm. level east the lode is composed of gossan, of the finest description, with good spots of copper ore. In the 22 fm. level west the lode is composed of spar and mundic, with some rich stones of black and yellow copper ore in places.—T. RICHARDS: Dec. 22.

GREAT SOUTH TOLGUS.—I beg to give you my opinion respecting this mine. I have known it for years—have been underground there at different times, and have always considered it to be a mine worthy of attention, and deserving the nominated capital or outlay. On one lode, some years since, there were several thousands of pounds worth of ore raised by virtue of a *paltry* water-wheel, which I always considered a *cobble*. I would recommend the erection of a steam-engine. There are several lodes in this sett that have not had any trial, nor have they been opened upon, even at the surface. About the central part of the mine there is a large cross-course, which runs at nearly right angles to the lode. The Great Tolgus mine made her greatest bunches of ore immediately east and west of the said cross-course. There is nothing done in Great South Tolgus to the west of the cross-course—not even a lode searched for: I would, therefore, recommend the searching of the western part of the sett to find the different lodes, the expense of which would be but trifling. Great South Tolgus is a sett nearly fenced around with mines, which have been very productive, some of which are now idle; still there are several adjoining now in operation, and doing very well. Taking the mine altogether, the number of lodes, the congenial strata, with all other localities, I think this sett will vie with any one in Cornwall.—T. TIPPETT.

GREAT WHEAL MARTHA.—The new engine-shaft is now sunk 31 fms. 2 ft. below the adit level; the shaftmen will have completed their bargain, and divided the engine from the whim-shaft, by Wednesday next; on which day we shall make arrangements to sink, in order to reach the 40, with every possible dispatch. We have sunk a few feet on the lode at Sherrell's bottoms since our last report; it continues about 4 ft. wide, and improves in appearance in depth; nothing has been done on it during the week, in consequence of having falls of snow.—J. PRINCE; T. PENALUNA: Dec. 19.

GUNNIS LAKE.—At Chilsworthy, the lode in Bailey's engine-shaft (now 2 fms. 4 ft. under the adit level) is 3 ft. wide, composed of gossan, peach, and spar, with stones of copper ore in places. In the 12 fm. level east the lode is 2½ ft. wide, peach, gossan, spar, and ore—very promising. There has been no lode taken down in this level west.—W. RICHARDS: Dec. 22.

HOLMBUSH.—In stoping down the piece of ground near the back of the 120 fm. level, we have intersected several brances of copper ore of good quality, varying in size from 2 to 6 in. wide, each of them underlaying south; we have taken down the lode in the 120 fm. level, west of the great cross-course, and find it to be 20 in. wide, and worth 40*l.* per fm.; in the same level, driving north, the ground is still hard; the ground in the 120 fm. level, south from the winze, is also hard; but we expect shortly to make the communication here. The rise above the 110 fm. level, on the north part, is communicated to the winze sunk below the 100, and have drained and ventilated both levels; the lode in the 110 fm. level, west of the lead course, is 1 ft. wide, and worth 7*l.* per fm.; and, driving east at this level, we have intersected the main part of the lead lode, which is 15 ft. to the east of the fluor part, and have cut into it about 10 in., but have not discovered the eastern wall; it is composed of fine stones of lead and fluor-spar; having intersected it yesterday, we are not in a position at present to speak of its value, until the size of the lode is ascertained and it can be fairly seen to the height of the lode; in the winze, sinking below the 110 fm. level, between the great cross-course and the lead lode, lode 1 ft. wide, and worth 12*l.* per fm.; the lode in the 110 fm. level south is 18 in. wide, composed of fluor-spar, flookan, and stones of lead; there is nothing particular to report on this week, as it respects the lead pitches—suffice it to say, we are preparing a small parcel of lead ores as fast as possible for the market.—W. LEAN.

HAWKMOOR.—In the 15 fm. level, east of Hitchins's shaft, the lode is 3½ feet wide, composed of capel, spar, and mundic.—P. RICHARDS: Dec. 22.

HANSON.—By way of report this week, I beg to say our flat-rod shaft, sinking under the 22 fm. level, on Stainsby's lode, is now under the level 3 fms., both in the shaft and stopes, or bottoms; the lode is from 20 in. to 2 ft. wide, and a good lode for ore. The tributers, in the back of the 22 fm. level, have taken down the lode—pretty good for ore; the lode is about 2 ft. wide.—Z. WILLIAMS: Dec. 21.

KIRKCUDBRIGHTSHIRE.—Stewart's shaft is sunk 30 fms. from surface on the lode, at which point we have cut ground for a dam, to fix a 6 in. plunger-lift, and are now busy cutting a plat south to accommodate the turn of a waggon, as we propose to fix a railroad, to discharge the stuff direct to surface from every point of operation in this part of the mine by water power. The lode in bottom of this shaft is upwards of 4 ft. wide, 2½ ft. of which contains a fine mixture of lead, producing 1½ ton of lead per fathom. In the east end in this 30 fm. level, 4 ft. from shaft, the lead is better, producing 2½ tons per fathom, with indications of an increase, but we are not able to explore this till we get the machinery to work, on account of quickness of water. A 20 fm. level is extended east of this shaft, 25 fms. 5 ft. 4 in.; 15 fms. of which through good lead ground. The lode in this end at present is 3 ft. wide, composed principally of spar, flookan, and mundic; six men are engaged stoping roof of this level—two at 30s. per fathom, and four men at 45s. per fathom, ground producing lead worth 4*l.* per fathom. A winze is in course of sinking under this level (6 fms. deep), through a course of lode worth from 4*l.* to 5*l.* per fathom. This level is also extended west 16 fms. 9 in., 8 fms. of which is good lead, ground particularly in the sole. The lode in the end is not large, but has lively indications of becoming larger and productive; this end is suspended, as we were apprehensive of an increase of water on the horse whim. Two men are engaged stoping roof of this level at 30s. per fathom; ground producing lead worth 3*l.* per fathom. Crouch's shaft, 75 fms. east of the foregoing shaft, is 16 fms. deep, in a very promising lode; this has been idle for some time on account of quickness of water; but we contemplate to resume sinking it as soon as we get the machinery to work by one chain and barrel. A third shaft has been sunk at a similar distance east of Crouch's on the lode, also 14 fms. 3 ft., containing spar, jack, mundic, and spots of lead; this is also idle by too much water. About half-mile east of this third shaft, we are driving an adit level on course of the lode, by four men, into rising ground, having nearly a mile before us to the boundary of our sett; this end is driven 31 fms., the lode is 3 ft. wide, and contains similar components as we observe in the lode at same depth, about Stewart's shaft, but not deep enough for lead. The water-wheel, 30 ft. diameter by 3½ ft. breast, is fixed into its place, except chisel plates of the buckets, which will be put on in course of the coming week; in meantime we are fixing mitre gear for drawing machine, fixing launders, making pully, stands, &c.; the whole of which, with good speed, I hope to see working by New Year's day. Two branches of leates are being cut and lined with marl, giving us an available fall of water on the mine of 80 ft.; we have, therefore, a spare fall for other wheels of 50 ft. from same leates. In our dressing department, a severe frost having set in for several days past, has put a stop to this branch of our operations for a while: we have 6 tons of lead dressed on the floors, 2 tons at surface undressed, and should say about 5 tons underground, in readiness to draw up. But the quickness of water prevents us doing so. I hope by end of January (weather permitting), to get a second parcel of lead to ship, say 20 tons, more or less; but judging from the lead gone down in sole of 20 fm. level, and the improving character of the lode at bottom of Stewart's shaft, I anticipate a very considerable increase in our returns after that period. One small parcel of lead has been sold from this mine, on 10th inst. (payable in January), at the Holywell Ticketing—viz.. 15 tons 8 cwts., at 10*l.* 7s. per ton, amount 159*l.* 7s. 9d.—less 5*l.* 9s. 5d. freight to Walker and Co.; 4 tons 6 cwts., at 8*l.* per ton, amount 34*l.* 8s.—less 1*l.* 10s. 1d. freight to Mather and Co. I further beg to state, that we have erected on the mine, smith's and carpenter's workshops, a powder-house, and suitable counting house and store room. We have about 1000 ft. yellow pine on the mine, and a prime lot of suitable materials to prosecute the mine to some extent, which, I trust, will be done with energy! Enclosed is the scale of operation on which I propose to proceed when the machinery is got to work, showing the working cost to be about 260*l.* per month.—J. BUZZO: Dec. 17.—[A comprehensive statement of the financial affairs of the company is appended to this report, and which must prove very satisfactory to the shareholders, from the explicit nature of its details. The mine, it appears, is at present is debt 59*l.* 6s. 1d.; a call of 1*l.* per share was announced in last Journal; and the next meeting of shareholders will be held on the 12th January.

LAMHEROOE WHEAL MARIA.—A ground-plan, with sections of the lodes and workings, accompany this report. The ground-plan shows that 12 lodes have already been discovered by costeaning, or intersected by the cross-cut, while one only has been seen in depth, and that at 16 fms. from surface, in Davey's shaft, which is generally supposed to be the K lode, or that upon which they are now working in Wheal Benny. In proceeding west of this shaft, the old men's workings are met with; and whether these are on the same, or on a parallel lode, it is equally encouraging and satisfactory, as one or other of them is proved to be rich in Wheal Benny, within 100 fms. of Lamherooe. East of the sett, at Davey's shaft, there is a cross-course running nearly north and south, which may have heaved the lode; but, under any circumstances, there can be no question of its being a strong and masterly lode, carrying with it jack, mundic, spar, and stones of copper ore. As regards the working of the mine, it is recommended to prosecute the operations in Davey's shaft with all vigour, and allow the engine-shaft to go down quietly. If practicable, 4 men should be transferred from the engine-shaft to Davey's shaft. The engine-shaft is sunk 25 fms. from surface, and it was intended to drive a cross-cut south at 30 fms.; but I think a level at this depth would be far too shallow, and, therefore, recommend that Davey's shaft be sunk until the L lode is met with, and then run down on the course of the lode, or underlay—thus proving it in depth, and affording the means of seeing the K and other lodes at a deeper level. As evidence of the importance attached to the cutting the lode in Davey's shaft, it may be observed that, in the adjoining sett (Great Wheal Martha), costeaning has been commenced, to prove the continuity of this and other Lamherooe lodes in their sett, The lodes range generally 15 to 20° south of east; 10 lodes underlie dorth and two south. I beg to express my full satisfaction with the ability displayed by Captain Tabb, who appears to be strictly observant of economy, consistent with the vigorous prosecution of the workings.—H. ENGLISH.

MENDIP HILLS.—Stainsby's shaft is sunk 9 fms. 1 ft. below the 38 fm. level, the appearance of the lode at this point continues much the same, composed of limestone quartz, with particles of lead at times—the ground is rather harder for sinking than it has been; the lode in the 38 fm. level south is about 5 ft. wide, composed of light coloured flookan, with branches of soft white spar, presenting a more favourable appearance than I have hitherto seen it.—F. C. HARPUR.

SOUTH FRIENDSHIP WHEAL ANNE.—On the Wheal Anne side of the cross course the shaft is sunk about 17 fms.—the last 6 of which have been through a beautiful stratum of light blue killas, highly congenial for the formation of copper; within the last fathom, branches of the lode have been cut—one about 4 in. wide, of light grey mundic, impregnated with copper; another about 8 in. wide, of dark-coloured mundic, thickly impregnated with black copper; and a third branch about 1 ft. wide, very promising, composed of prian, peach, and stones of copper ore. Since cutting these branches, the water has been so rapid that we are obliged to discontinue sinking until we have another lift of pumps in. The lode in the adit was about 5 ft. wide, containing mundic and very rich copper ore, and would set at a very low tribute; we, therefore, confidently expect, when we cut the lode at the 20 fm. level, and drive west to the great cross-course, to have a course of copper ore. In this mine the cross-courses are the same as those in the Great Friendship, and in the vicinity of which the lodes have made so very rich in that mine. In the South Friendship side of the cross-course, the wheel-pit and lobby are completed, so that the wheel will now soon be in readiness to work. In driving the lobby east a lode of 2 ft. in width was intersected, about 8 in. of which was nearly solid copper, a specimen tried produced so high as 42½—certainly finer copper ore was never seen. In working their levels, the old company appear only to have driven east and west, and do not seem to have kept the lode long, as it was disordered by the cross-courses, and never cut it but between them; the present company, however, have cut it both east and west of the cross-course, and, to all appearance, the lode will be very productive—at all events, the prospects of the company are very flattering.—JOHN SPARGO, superintending agent; JAMES HARRIS, captain.

STRAY PARK AND CAMBORNE VEAN.—Statement of tutwork operations during the month of November:—Driving 60 fm. level west, on south lode, ground opened, 1 fm. 1 ft. 10 in., at 7*l.* 10s. per fm.—the lode 10 in. wide, yielding good stones of ore. Rising above 70 fm. level, 3 ft. 1 in., at 9*l.*—the lode 18 in. wide, yielding 3 tons of ore per fm.; driving the 70 fm. level west, 2 fms. 9 in. (one at 10s.*) at 7*l.* 10s.—lode small, with stones of ore. Driving the 80 fm. level ditto, 1 fm. 5 ft. 1 in., at 8*l.* 10s. (one at 5s. 6d., and one at 12s.*)—the lode 1 ft. wide, yielding 1½ ton of ore per fm. Driving the 90 fm. level ditto, 1 fm. 5 ft. 7 in. (one at 5s. 6d., and two at 9s.*), at 8*l.*—the lode 18 in wide, yielding 2½ tons of ore per fm.; sinking the 90 winze, 1 fm. 5 ft., at 11*l.*—the lode 2 ft. wide, yielding 4 tons of ore per fm. Driving the 100 fm. level west, 1 fm. 3 in. (one at 5s. 6d., one at 6s., and one at 9s.*), at 12*l.*—the lode 18 in. wide, yielding 1 ton of ore per fm.; sinking the 100 winze, 1 fm. 1 ft. 10 in., at 9*l.* 10s.—the lode 3 ft. wide, yielding 5 tons of ore per fm. Driv-

ing the 110 fm. level west, 1 fm. 4 ft. (one at 6s., one at 11s., and one at 12s.*), at 9l.—the lode 2½ ft. wide, yielding 4 tons of ore per fm. Driving the 120 fm. level ditto, 5 ft. 6 in. (one at 10s., one at 11s., and one at 12s.*), at 11l.—the lode is 18 in. wide, yielding 1 ton of ore per fm. Sinking the 130 winze, 2 fms. 2 ft., at 8l. 10s.—the lode 1 ft. wide, yielding 1 ton of ore per fm. Driving the 124 fm. level west, on main lode, 1 fm. 5 ft., at 8l. 10s.—the lode 10 in. wide, yielding 1 ton of ore per fm. Driving the 150 fm. level west, on south lode, 5 ft. 2 in. (one at 12s.), at 10l.—the lode 15 in. wide, yielding 1½ ton of ore per fm.; driving the 150 fm. level east, 1 fm. 3 ft. 3 in. (one at 8s. 6d. and one at 8s.*), at 9l.—the lode 2 ft. wide, yielding 2 tons of ore per fm. Driving the 180 fm. level east, 1 fm. 5 in., at 13l.—the lode 10 in. wide, yielding good stones of ore. Four men employed at each working except the last, where there are six. The tribute ground is looking very well, and our next sampling will exceed 500 tons.—R. Eustice; E. Ralph: Dec. 21.—[* Tribute pitches.]

SOUTH WHEAL TRELAWNEY.—Soby's lode, in the adit south, is from 18 in. to 2 ft. wide, composed of white killas, spar, gossan, and mundic, with sprigs of copper and lead. The ground in Snell's shaft is favourable for sinking; water quicker down from surface in the 5 fm. level.—W. Jenkin: Dec. 19.

SOUTH TAMAR UNITED.—The weather being so severe this last week, the masons have not been enabled to do anything to the engine-house since last report. We have cleared the adit level 45 fms. north.—B. Robins: Dec. 22.

TAMAR SILVER-LEAD.—In the 160 fm. level there has been no lode taken down since last report. In the 145 fm. level the lode is 6 in. wide, composed of capel, with spots of ore. In the 135 fm. level we are passing through orey ground that will work at a low tribute; at present, the lode is 1 ft. wide, rich work. In the 125 fm. level we are also passing through ground that will set at a low price; the lode in the end is 2 ft. wide, work of a good quality. In the 115 fm. level the lode is 6 in. wide, producing a small quantity of ore. In the 105 fm. level the lode is 1 ft. wide, saving work, but not rich. In the 145 fm. level, north of the shaft, the lode is 1 ft. wide, composed of capel and ore—work of a promising character. At the north mine, in the engine-shaft, the lode is 4 ft. wide, composed of capel, mundic, and small stones of ore. In the 60 fm. level the lode is 18 in. wide, orey throughout. In the 50 fm. level the lode is 9 in. wide, composed of capel, can, and ore, saving work. At Wheal Hancock, we are still cross-cutting east. At Hole's Hole, we have cut through the lode—it is about 2 ft. wide, composed of flookan and mundic, and discharging a large quantity of water, insomuch that we cannot at present keep the water with the whim.—James Sprague: Dec. 21.

TRELEIGH CONSOLS.—Christoe shaft, below the 100 fm. level, is sinking in the country. In the 100, east of Christoe's shaft, the lode is 2½ ft. wide, worth 10l. per fm., no improvement in the past week; in the 100, west of Christoe's shaft, the lode is 10 in. wide, no ore. Garden's shaft, below the 90 fm. level, is sinking in the country. In the 90, west of Garden's shaft, the end is now in the cross-course, no mineral; in a few days we hope to get through it. In the 80 fm. level, west of Garden's shaft, the lode is 2½ ft. wide, producing good stones of ore. In the 70, west of Garden's shaft, the lode is about 1 ft. wide, but little mineral; in the 70, west of Good Fortune, the lode is 4 ft. wide, producing some good ore, not to value. In the 60, west of Symons's, the lode is 10 in. wide, producing a small quantity of ore. In the 50 east, on the north lode, the lode is small, without ore. In the 44, west of Symon's, the lode is about 10 in. wide, producing some ore, not to value. In the adit cross-cut, driving south to western shaft, better air at present.—W. Symons: Dec. 19.

UNITED HILLS.—In the 90 fm. level, eastern end, no lode broken for the past week; in the western end we have driven through the south lode about 18 in., which is ore of fair quality; in the eastern stopes the lode is 2½ ft. wide, worth 10l. per fm.; the lode in the western stopes is 3 ft. wide, worth 25l. per fm. In the 80 fm. level, eastern end, the lode is 4 ft. wide, worth 6l. per fm.; in driving north the ground continues hard. In the 70 fm. level, eastern end, the lode is 2½ ft. wide, worth 14l. per fm.; in the west of James's, the lode is 2 ft. wide, worth 8l. per fm.; in the stopes, west of eastern shaft, the lode is 3 ft. wide, worth 20l. per fm. In the 60 fm. level the lode is 3 ft. wide, worth 12l. per fm.; in the shallow adit the lode is large and unproductive. At Wheal Charles, in the 50 fm. level, the lode is 18 in. wide, poor. In the 40 fm. level the lode is 3½ ft. wide, worth 12l. per fm. At Wheal Sparrow, in the 40 fm. level, there has been no lode broken for the past week. In the 30 fm. level the lode is 4 ft. wide, worth 6l. per fm.; in Turner's shaft the lode is 3 ft. wide, worth 10l. per fm.; this shaft is not looking quite so well as last reported.—Thomas Trevenen; Robert Williams: Dec. 22.

WEST WHEAL JEWEL.—In the 115 fm. level, east of cross-cut, on Wheal Jewel lode, the lode is 18 in. wide, looking more promising for ore than it has for some weeks past. The pare of men that have taken up the winze in the bottom of the 85 west of Hodges's cross-course, on Wheal Jewel lode, have been cutting a winze plat, and are now about to commence sinking; in the 85 cross-cut south, on Williams's cross-course, the ground is favourable for driving. In the 12 fm. level, west of Hodges's cross-course, on Tolcarne tin lode, the lode is 15 inches wide, and worth 12l. per fm; in the winze in the bottom of this level, the lode is worth 25l. per fm; in the winze east of Quarry shaft, in the bottom of the same level, on Tolcarne tin lode, the lode is 1 ft. wide, worth 7l. per fm.; in the 12 fm. level west of old sumpshaft, on same lode, the lode is 10 in. wide, and worth 8l. per fm. The winze west of Quarry shaft, in the bottom of the deep adit, on the same lode, the lode is 2 feet wide, and worth 30l. per fm.—R. Johns: Dec. 21.

WEST WHEAL MARIA.—The ground in the eastern engine-shaft is still hard for sinking; the lode in the shaft is from 5 to 6 ft. wide, with stones of ore occasionally. At the western engine-shaft the sumpmen are still engaged about the plunger lift, and preparing to drop another lift to the 44 fm. level, which we hope to complete at the end of this week.—T. Rodda: Dec. 22.

WHEAL ADAMS.—The 50 fm. level, driving south, on the eastern lode, is much the same as last reported; we have suspended this level for a short time to put the men to rise in the back of this level to heave down the water; it is very bad for driving—it is always running against them; the 50 fm. level, driving south on the western silver-lead lode, is much the same as last reported; the rise, in the back of this level, is poor at present. The 40 fm. level, driving north, is much the same as last reported. The 35 fm. level, at the old engine-shaft, is a very kindly lode, worth 4l. per fm.; in the cross-cut, driving west to cut the copper lode, they are got in about 2 fms. in gossan lode, now the one in below ground, with a little lead in it; the tribute pitches are looking very much the same as last week. I think that the tributers are getting fair wages in their tribute.—T. Moyle: Dec. 22.

WHEAL AGNES.—The lode in the levels is 18 in. wide, saving work, much the same as last reported.—B. Robins: Dec. 22.

WHEAL ROSE.—The sale of ores, 100 tons 9 cwts., produced 2010l. 6s. 3d., or nearly 20l. per ton—[the particulars appeared in the *Mining Journal* of the 12th December]—being rich for silver; and, from the present workings, there is every reason to believe that equal, if not an increased, price may be obtained. From the several parcels of ore, it is clear that the better the ore is dressed the greater will be the profit derived by the adventurers; and, consequently, we shall—instead of mixing the several qualities with those of lower produce, as in a smaller parcel of 9 cwts., which fetched a comparatively insignificant price—keep the halvans in stock, until we put up the stamps. The lode has been cut at the 52 fm. level, in the cross-cut driven from the new engine-shaft, on which we have commenced driving south, on a lode worth 25l. per fm.; and have set a tribute pitch to sink a winze from the 42 to the 52 fm. level, at 20s. per ton on the lead raised. The profit on the three months, ending October, may be taken at 400l. to 500l.; but, with the ground explored, and our improving prospects, as the lode is further developed, we may fairly calculate on increased returns.—*Porthleaven, Dec.* 15.——This mine continues to look well. Yesterday was setting day, when we set the new engine-shaft to sink 10 fms. with all dispatch, to get another level at the 62 fm., which promises to be the best we have yet had. We also set the two ends to drive on the lode at the 52 fm. level, north and south from the new engine-shaft, in each of which we have a very fine course of lead. So great was the competition of the men, that instead of requiring 3l. to 4l. per fm., which may be considered a fair cost for the ground, they actually offered a bonus, which was paid before their names were being entered in the bargain-book. As regards the gossan from the back of the lode, we this week sent a small quantity to the smelting-house, to ascertain its component parts, and the value we might attach to it, and it affords me pleasure to inform you, that the returns were 11l. 16s. 6d. per ton for silver. What may be the advantages we shall derive from this source, it is not for me to offer an opinion; but the result of our first sample must, at least, be considered highly satisfactory, as a considerable quantity may be calculated upon as being raised from the backs on the new lode.—*Dec.* 19.

WHEAL TRELAWNEY.—The lode in the 42 fm. level north is 4 ft. wide, and worth 25l. per fm.; in the same level south it is 2 ft. wide, and worth 18l. per fm. The lode in the 32 fm. level north is 3 ft. wide, and worth 17l. per fm.; in the same level south it is 3½ ft. wide, and worth 22l. per fm.; in a winze, sinking under the 32 fm. level, about 6 fms. north of the shaft, the lode is 3½ ft. wide, and worth 24l. per fm. The winze under the 22 fm. level north is holed to the 32 fm. level. The lode in the 12 fm. level north is 3 ft. wide, and worth 10l. per fm.; the stopes, generally, are looking well. Trelawney's shaft is holed to the 22 fm. level. Our engineers are getting on very well with the erection of the new engine.—Peter Clymo, Jun.: Dec. 21.

Wheal Anderton.—The progress in sinking the engine-shaft during the present week is satisfactory, and the lode still improving; large stones of rich ore, besides a good pile of work, has been got up—one weighing upwards of 1 cwt. Many shares have changed hands; the present quotations are from 25l. to 22l. per share.

West Wheal Prosper.—The 50-in. cylinder engine was put to work in the afternoon of the 17th October, and was abandoned on the 19th of December following, in the morning. This sett is about 80 fms. long, and being worked by Mr. Thomas Saunders Cave, late of Thomas's Hotel, Berkeley's-square, but now residing at Polmenna, near Penzance.

FOREIGN MINES.

IMPERIAL BRAZILIAN MINES.—*Gongo, Oct.* 3.—I am happy to inform you that the gold troop, under Capt. Guy's command, has returned in safety, having made the journey in the brief space of 28 days only—a fact which I believe is without a parallel in your service. The heat and cold on the road brought on Capt. Guy a severe rheumatic attack, which confined him to bed for several days; but I am happy to say, he is again able to visit the mine. The rainy season has commenced with floods of unusual severity; but, as we had prepared for them, they have done no damage. The rubbish at Catta Preta is not yet quite exhausted; it more than repays the cost of the small force employed there. During the past 10 days, we have had a small quantity of work for the washing-house from the 41 fm. level, near Curtis's shaft, and a "hat cap" or two from between the 14 fm. and the shallow level, east of Bray's shaft; the other parts of the mine afford nothing new; westward, we have driven several cross-cuts, both north and south, but without discovering anything worthy of notice in either of them. *Oct.* 13.—In a cross-cut, north of Duval's shaft, at the 14 fm. level, on intersecting some old workings on the north vein, a few pounds of gold were found under very peculiar circumstances in a small parallel line, which we are now following; but, since the first day of its discovery, it has yielded nothing: the other parts of the mine, though regularly worked, unfortunately present nothing new. At Catta Preta, we are now very near a close. Since my last, the rains have ceased, and we have had a few very hot days.—W. J. Henwood.

Gold Workings, from 1st July to Oct. 12th, 73 lbs. 9 ozs. 14 dwts.; from Catta Preta, 8 lbs. 8 dwts.—total, 81 lbs. 10 ozs. 2 dwts.

NATIONAL BRAZILIAN MINES.—*Cocaes, Oct.* 13.—From the continued dry weather, we are prevented handing you such favourable intelligence respecting the produce, as we could wish. The appearance of Oxenford's stopes is very favourable; and as soon as we have a sufficiency of water to work our stamps properly, we shall, doubtless, have very satisfactory returns. Some very favourable samples have been taken from the top of Terril's winze, or just below the bottom of the Bandena level: this is the same line of ground as that which was met with in cross-cut C C. We have every reason to believe, that something very favourable will be obtained from this section of the mine.

Cucaba, Oct. 6.—We consider it advisable, the moment a pass is open to the level below, which is now nearly under it, to place all the force that can be conveniently employed on the stopes west of it, as it can be seen from the quantity of stone extracted from them from the 22d to the 25th ult. inclusive, and from the produce obtained from it, that as soon as we can supply all our stamps with stone from that place, that most excellent gold returns will doubtlessly be obtained.—J. Hitchins.—Produce for 10 days—Cocaes, 2 lbs. 1 oz. 0 dwt. 37 grs.; Cucaba, 2 lbs. 4 ozs. 6 dwts. 48 grs.—4 lbs. 5 ozs. 7 dwts. 13 grs.

Great South Tolgus.—A report on the prospects which may be contemplated from the prosecution of this mine appears in our columns of to-day, which cannot be considered otherwise than conclusive, as to the advantages likely to be acquired from working the mine, judging of its proximity to other productive setts, and being in a "congenial strata," which latter is, perhaps, better understood west than east of Exeter. The report, however, tells its own tale; while that of the agents of East Wheal Rose, Levant, and other mines, called upon to examine and report upon the mine, and which accompanies the prospectus, cannot be deemed otherwise than satisfactory, and holding out inducement for the application of capital. It appears, from the advertisement in another column, that the shares have been in sufficient demand to allow of a limit to the time for application being announced.

Merionethshire Slate and Slab Company.—We have, on more than one occasion, adverted to the operations of this company, and are well pleased to find, from the accounts rendered of the two past months' workings, that it bids fair to justify the anticipations entertained by the projectors, and those who have taken an interest in the undertaking. The produce for the period referred to has been limited, arising from the want of sufficient machinery; but it is satisfactory to learn, that, on an expenditure of about 680l., the quantity obtained is of the value of nearly 1800l.—thus yielding a profit of nearly 100 per cent. on the cost. We may observe, that the slabs made form four-fifths of the amount—the entire make of slates not exceeding 240l.; and as the quality of the former is remarkably good, of which those interested may be assured, by inspection of the specimens at the office, there can be no question but they will find a ready market from the increasing application of the material.

Copper Bottom.—This mine, which has been in operation for upwards of 12 months, is now about to commence in a more spirited manner. The workings, which have been confined to the extension of the shallow and deep adits, and the backs of the same, will be continued; whilst the most active preparations are about being made for the complete development of the lodes, which, at one period, proved most productive. At a meeting of the shareholders, lately held at Exeter, it was arranged that a deputation (consisting of Sir Thomas Tancred and other gentlemen) should visit the mine, and furnish a report of its present situation and future prospects.—The following report has been furnished to the shareholders, as the result of their investigation:—That having met Mr. Carne, of Falmouth, a gentleman of much experience in mining operations, Capt. Nicholas, and Mr. Paull, on the mine, they proceeded to make the needful inquiries, and first visited the buildings. They found the engine-house, stack, counting-house, cottages, stores, and dressing-floors, in excellent repair. The shafts of the mine were next examined, and found also to be completely timbered, and ready for the operation of machinery, when required. Thus the ground has been already opened, and some thousands of pounds worth of work done to the hand of the present proprietors. On the dressing-floors were 100 sacks of tin ready for the market, raised from the Foxholt lode, for which 45l. was offered by Mr. James, of Hayle; there was also some copper ore ready for sale, raised from the back of the caunter and north lodes together, of the value of about 100l. The caunter lode, on which the great discovery and sale of ore was made by the former adventurers, was next surveyed on the surface towards its extremity to the west, where the East Relistian Company are sinking a shaft, and erecting a steam-engine, upon the continuation of our lode, within a few paces of our boundary, from which they have already sold about 1000l. worth of ore, raised above the adit level; this proceeding will, of course, be highly beneficial to our future operations in this part of the mine; near here also some ore is being raised on our caunter lode by tributers; this lode, over its whole extent, has a quantity of fine gossan—a sure index of mineral riches below. It was ascertained that the main shaft in the centre of the sett, where the rich bunch of ore was discovered, had been sunk 43 fms. in depth, and that the ore was again making its appearance at the bottom, at the suspension of the former workings. On the north lode we ascertained that about 3000l. worth of ore had been raised on the former workings, of very rich quality, in the course of sinking 22 fms., and there was ore going down, when the mine was suspended—at present some ore has been laid above the adit level on tribute; this lode appears only to require the aid of machinery to make immediate returns. A new lode has been discovered, from which they are raising a large quantity of mundic, with good indications of copper. The Foxholt tin lode adjoining must have been formerly wrought to a great extent on the surface, from the appearance of the workings; and stamps had been erected to return the tin raised. At present the tributers are working three pitches on this lode at 6s., 7s., and 9s. in the 1l.; but this profitable operation cannot be very long continued without the aid of a steam-engine; a quantity of tinstuff remains on this spot, as refuse from the tributers' ore on the floor, worth about 3l. per ton; all the prospects of this lode are very promising. The value of tin now to be sold is 150l. The books and accounts of the mine were next examined; and it was found, that an expenditure of 1142l. 12s. 9d. had been made up to Oct. 31, on the workings above the adit level, since the recommencement of the mine in August last year; and that there is now due to the purser the sum of 322l. 12s. 9d.; and, although additional proof had thereby been acquired of the certainty and value of the lodes contained in this very extensive sett, yet the aid of machinery would be required to bring them into a state to make profitable returns, and to realise permanently the encouraging prospects presented to the adventurers. Your deputation would further remark, that the mine is situated in a good country, in the midst of successful and flourishing concerns. In order to obtain from the best authority a correct estimate of the outlay required, the deputation proceeded to St. Day, to meet Capt. Richards, agent for the Consolidated Mines, who stated the following to be what he had maturely considered to be a proper estimate, for giving the mine an effectual trial, with a steam-engine of extensive power, together with all necessary machinery and appendages:—66 inch cylinder of 400-horse power, engine and boilers, 1200l.; carriage and erection, 500l.; pitwork pumps, 200l.; rods, 100l.; plates and ironwork, 100l.; sundries, 100l.; plunger, poles, &c., 150l.; shaft, 200l.; ropes and shears, &c., 1500l.; six months' working cost, at 300l. per month, 1800l. = 5850l. That he would add 4000l., to work the mine for an additional 12 months, making the cost for 18 months, in all 10,000l.—during which time he expected large returns would be made: but he always advised that an estimate should never include any advantages not realised, although they may be prospectively certain. He stated that the extreme risk of the shareholders could not exceed 5000l. in the aggregate, for giving an effectual trial of the Copper Bottom Mine, as, in case of failure, the plant will be worth the difference. Your deputation, therefore, on the express arrangement that the Cornish shareholders agree to pay their calls to this extent, for giving the mine an effectual trial, feel bound to recommend their friends to do that which, after this inspection, they are desirous of doing themselves—viz.: to give the mine a trial to this extent, in the full assurance that a good result will ensue. After mature deliberation on all the circumstances of this important sett which have now been brought under their notice, your deputation recommend the following course to be adopted:—That a call of 1l. per share be made, for continuing the present operations of the mines above the adit level, where chances of new discoveries present themselves, during the time that the engine is in course of erection. That a steam-engine be ordered or purchased, as recommended by Capt. Richards, and erected under his direction. That, for the purpose of meeting this expenditure, a further call be made, as soon as required for the engine, of 2l. per share; future calls of such amounts, and at such periods as the state of the works shall require, two months' notice of each being given, till the foregoing estimate be raised. That the calls be paid into the Miners' Bank, Camborne, Cornwall; and that Mr. James Paull, the purser of the mine, be ordered to draw all moneys for the use of the said mine; and all calls, continuing in arrear for three months, shall subject the shareholder to the forfeiture of his share, to be declared by a meeting of shareholders. That the office of the company be No. 9, Bedford Circus, Exeter, where the accounts shall be kept strictly on the Cost-book System, by which contingent liabilities are avoided in the payment of all accounts monthly, together with full information of the state of, and operations on, the mine, from the reports of the purser. That the accounts of the mine being kept by the purser at the account-house upon the mine, to be open to the inspection of shareholders. That all shares and transfers of shares be duly registered in the cost-book of the mine, and in the books of the company, kept at their office in Exeter. That account meetings be held every two months at the account-house, of which shareholders will receive notice from the purser. The above having been submitted to the Cornish shareholders for their consideration, has by them been approved and confirmed.

Wheal Mexico.—The shareholders, who paid their last call, have received a dividend of 1l. per share, from the proceeds of the sale of machinery, &c. The mine was abandoned in consequence of the silver lode being found poor at the 20, and also split into branches. The copper lode, however, is considered, by competent judges, to be a fair speculation; but it ought to be worked in conjunction with East Cornwall Mine (as it is a parallel lode, and not far distant from it); and to prove that mine effectually, a large amount of capital would be required. Much credit is due to the purser for so early a remittance of the dividend, as the mine only ceased working about two months since; and, there is no doubt, this consideration for their interests is duly appreciated by the adventurers.

Wheal Vlow (Perranzabuloe).—Since the commencement of operations on this mine, in April last, 200 fms. of the old adit have been cleared and secured, the cost of which, including the necessary materials, averages about 8s. per fm. About 30 fms of the old adit shaft have also been cleared and secured, and a footway fixed to that depth since the last meeting, the average cost of which, including the necessary materials, is about 22s. 6d. per fm., making together as follows:—200 fms. of adit, at 8s., 80l.; 30 fms. of shaft, at 22s. 6d., 33l. 15s. = 113l. 15s. The total amount of cost from the commencement is 147l. 1s. 2d., which includes all materials received; and it is confidently expected, calculating from the average cost of clearing from commencement, that from 50l. to 75l. will bring us to the next shaft, which is about 100 fms. east from the present workings, where, according to the best and most authentic reports, handed down from persons who first explored the ground, and whose testimony there is no reason to doubt, a good branch of silver-lead ores will be found on the Wheal Golden and Penhale lodes, which evidently must cross the adit about our next shaft. We shall also, during our proceeding with the next 100 fms., have an opportunity of ascertaining the value of the tin lode on which the old adit was driven, and on which, according to the old books, now extant, tin to the amount of several thousand pounds was found, and, no doubt, left considerable profits to the adventurers, who, nevertheless, only partially explored the mine below the adit in one part, and there only about 2 fms. deep, where they found good work for tin; but the workmen, neglecting to secure the sink, the ground fell in, and Wheal Ramouth and other mines cutting rich about this time, the labourers left in hopes of obtaining more wages, and the mine was abandoned—soon after which the adit fell in, and the water covered the workings; but, subsequently, attempts have been made to get at the branch of lead, said to have been seen in the adit, but the water prevented its being seen—so that from the time the mine was first abandoned, no person has ever been in the adit in this part of the mine; and, when the lead was discovered, its value was only about 5l. per ton.—A meeting of the adventurers was held, on the 1st inst., at Mrs. Prout's, Perranporth, when the accounts, showing a balance of 51l. 16s. 2d. against the adventurers, were examined and allowed, and the balance placed to the debit of the next account.—It was also resolved, that the 128 unappropriated shares be equally divided among the shareholders, according to their respective interests, and that a call of 7s. 6d. per 256th share be, and is hereby, made, for the future working of the mine.

MINING IN CORNWALL AND SOUTH AMERICA CONTRASTED.

[Extracted from the Appendix to Sir Francis Head's *Journeys Across the Pampas*, as published in Mr. Murray's *Home and Colonial Library*.]

Those who propose to work a mine in Cornwall have the following advantages over those who propose with the same people to work a mine in South America.

1. In Cornwall, previous to commencing operations, they may inspect the mine themselves, and call *any* number of practical men to assist them.—In South America they cannot do this, but must commit this important duty to one or more individuals.

2. In Cornwall, the lode is in a country whose climate is favourable to great bodily exertion, and the general character of which is industry; but in South America, the climate and excessive heat are unfavourable to great bodily exertion, and the general character of the country is indolence.

3. In Cornwall, the miners are subjected to a code of most admirable local regulations, which encourage competition and industry, and leave the idle to starve:—In South America, the miners are away from the force of those regulations, and a high, fixed salary, with cheap wines and provisions, discourage competition and labour.

4. In Cornwall, although the miners have no theory, no schools, no books, yet, from long practice and experience, they most perfectly understand the geological construction of the country, the particular nature of the ores they seek, and the difficulties which they are likely to meet with.—In South America, the geological construction of the Andes, and the mountains in which the mines are situated, is unknown to the Cornish miner—he is unacquainted with the ore he is to seek. The muriates, carbonates, pacos, colorados, and other non-resplendent ores, are by him so unnoticed, and unvalued, that the native miner has actually to point out to him the riches of the mine he is come to improve.*

5. In Cornwall, the greatest difficulties are the subterraneous streams, which, in a humid climate and a flat country, so influence the plan of operations, that the art of mining in Cornwall is the art of draining, not on a general principle, but adapted to the geology of the country.—In South America, as it never rains at Uspallata, and seldom rains in Chili, and as the winter showers, instead of sinking into the earth, rush down the precipitous sides of the mountains in which the lodes are situated, there is but little water; and, therefore, the Cornish plan of operations, and consequently, the experience which the Cornish miner has gained, is inapplicable—for the difficulties which he has learnt to overcome, do not exist; while others oppose him, which he has never been accustomed to meet.

6. In Cornwall, to drain the mines, steam-engines can be procured at a short notice; and if, for any particular object, a large body of men are required for a few days, they can always be had; also whatever tools, wood, iron, rope, &c., may be required, can be obtained with a facility and punctuality known only in England. In South America, from the absence of water, the overpowering force of steam is unnecessary, inapplicable, and its great advantage is unattainable. In cases of unforeseen difficulties, requiring for a few days the assistance of a large body of extra labourers, it would be absolutely impossible to obtain them. Tools, iron, and materials could only be procured with the greatest possible difficulty. In many situations it would be necessary to send several hundred miles for materials; the purchaser would be assailed by every endeavour and combination to defraud—they would be delivered at a great expense of time and money; and in a country in which contracts are not understood, and time is of no value, there would be the most serious delays and disappointments.

7. In Cornwall, the expenses of the mine are known. The customary wages of the captains of the mines, the pay of the miners, who all work by tribute,† or by tutwork, are accurately calculated; the price of tools, iron, wood, rope, and all materials, is known, and the sale of the ores by public auction gives an immediate and certain return.—In South America, the expenses of each mine can never be anticipated. The wages of the English captains and miners are very high; every article, if purchased a thousand times, would be the subject of a new bargain, and materials would be, perhaps, of double or treble cost, according to the people and the spots from which they were to be obtained. After the extraction and reduction of the ores, the processes of smelting and amalgamation, which in Cornwall are unknown (the Cornish ores being always smelted in Wales), would be required.

8. In Cornwall, in case it should be deemed necessary to abandon the mine, the men can be discharged; the engines can be removed; the materials can be sold by auction, and the loss is only what has actually been spent on the mine.

* There exists in England a natural feeling of confidence in the exertions of English workmen, but I am afraid this expectation will not be realised in South America. The Cornish miner is, I believe, one of the best regulated workmen in England; but, like all well regulated workmen, his attention has been directed to a particular object, and, in proportion as he is intelligent upon that point, he is ignorant of all others. By a division of labour, which is now so well understood in England, we have goldsmiths, silversmiths, tinsmiths, coppersmiths, whitesmiths, and blacksmiths, who are all ignorant of each other's trades; and if this is the case, why should a man whose life has been spent in working copper ores be supposed able to search in any country for silver-ores? There is certainly a much greater difference and variety between the ores than there is between the metals.

† Excepting the levels which are always driven by tutwork (task-work), the mines in Cornwall are all worked by tributers. These tributers are the common miners, who take their pitches by public auction, at which they agree to deliver the ore fit for market for different prices, from 6d. to 13s. 4d. in the 1l., according to the nature of the ground, the ore, &c., &c. The adventurers of the mine, therefore, are tolerably sure of their profit before the work is begun, for the tributers pay the smith-cost, candles, powder, breaking, wheeling, and drawing. They pay men for spalling and cobbing the large rocks, for separating the prill from the *dredge*, and they also pay girls for bucking the ores, and boys for jigging.

—In South America, in case the mine should be deserted, to the sum sunk in the mine is to be added the expense of the men getting to the spot and returning, which in many cases would be very great; the construction of houses for officers and men, as also the establishments for smelting and amalgamation; the cost of engines and stores, which it would often be cheaper to abandon than to remove.

2. In Cornwall, the resources of a great mercantile country are so extensive, that public competition suppresses every sort of unjust combination, but among small communities of men this would be impossible; and without the slightest intention to blame any individual, I must declare that, from the Atlantic to the Pacific, I found that Englishmen and foreigners were preparing to monopolise every article that could be required for mining purposes; and that a large English capital, belonging sometimes to A, and sometimes to B, was considered by a pack of people as a heedless, unprotected carcass, which was a fair subject for universal "worry."

TINCROFT MINING COMPANY.

A quarterly general meeting of shareholders was held at the offices, Finsbury-square, on Thursday, the 24th inst.

P. N. JOHNSON, Esq., F.R.S. in the chair.

The advertisement convening the meeting having been read from the *Mining Journal*, the CHAIRMAN said, that, in accordance with the views entertained by the shareholders, the present meeting had been convened, which formed one of the periodical quarterly meetings—the object being to lay before the body of adventurers not only the state of the mine—which, however, might be collated from the reports, which were at all times open to the shareholders, and, moreover, published from time to time—but to place before the shareholders the financial position of the company, which, he was happy to say, on the present occasion, was one on which he might congratulate the meeting. The accounts submitted, it would be seen, embraced four months' expenditure, with the returns for the like period—thereby showing a balance of 3215*l.* 10s 5d. in favour of the company up to the end of September, out of which balance the directors had declared a dividend of 10s. per share, and which was now in course of payment. The directors had, with the view of consulting the wishes of the proprietors, as expressed at the last meeting, endeavoured to arrive at the probable cost and returns for October, and which might be calculated upon as being—for copper ore sold, December 3, 1797*l.* 5s.; and tin for sale 1400*l*=3197*l.* 5s.; from which was to be deducted October cost, 2690*l.* 9s.: thus leaving a balance on that month of 506*l.* 14s., or after the rate of 6000*l.* per annum; and which, if added to the surplus over the dividend declared on the profits, would leave a balance to the end of October of about 720*l.*

The following agent's report and accounts were then submitted, and approved, as will appear from the resolutions passed, and which will be found in our advertising columns.

REPORT.

Tincroft Mines, Dec. 18.—I beg to hand you my report of the state and prospects of these mines; but I presume, I need not trouble you with a detailed statement of what we have done, &c., in the past quarter: the truth will be apparent to you, from the statements of costs and returns, that we have done much better for that time than for the preceding part of the year: this has been in consequence, principally, of improvements for tin in the south mine, and the 70 fm. level east in the north mine (also for tin). I am glad to say that we continue to lay open ground in the south mine, that will work at a moderate tribute, and continue for a considerable time. We have made a good discovery on Chapple's lode (which has hitherto had but a very partial trial); in the western part of the mine, we have now 10 men working on it, and shall increase hands as soon as we communicate from the 90 to the 100, by sinking and rising to ventilate both the levels. In the eastern part of the mine, we have discovered a very promising caunting lode at the 81, and we are now driving a cross-cut towards the same lode, at the 72, as we consider it to be worthy our best attention; we are also driving a cross-cut towards Highburrow south lode; at the 110, this lode has been, and still is, very productive. I feel pleasure in saying, that the south mine is looking better now, than I have seen it for years past. In the north mine, we continue to lay open copper ore ground that will work at a moderate tribute; but the eastern levels for some time have been more productive for tin than copper. At Palmer's, the water is to the 70, in consequence of making some alteration in the pitwork; the 70 end west is looking very promising for copper ore, as are also some of the pitches. We are getting on favourably driving the deep adit from East Crofty to our new shaft, and are also getting on very well cleansing Wheal Providence adit; but I regret to say, it is very expensive for timber: I hope, however, that the worst is over—that we shall be able to go below the adit by the end of another quarter. On the whole, I consider our prospects very cheering.—W. PAUL.

General Statement of Accounts.

Dr.—June Cost	£3147 8 10		
July ditto	2738 10 5		
August ditto	2395 4 0		
September ditto	2672 0 0		
		£10,953 3 3	
Directors' attendance	£ 75 0 0		
London management	40 0 0		
Petty cash (12 months)	33 11 9		
Auditors	4 4 0—	152 15 9	
Interest		22 3 1	
Balance, or profit		3,215 10 5	
Total		£14,343 12 6	
Cr.—Balance		£ 889 4 6	
Ores, &c.—June month	£3534 6 1		
" July ditto	3048 19 4		
" August ditto	3461 19 6		
" September ditto	3409 3 1—	13,454 8 0	
Total		£14,343 12 6	

Balance-Sheet.

Tincroft Mine	£38,784 9 7	W. Paul	£ 736 18 3
Sapte and Co.	2,639 2 5	Bills payable	2,204 0 4
Bills receivable	3,626 12 3	Capital	42,000 0 0
Fourth Instalment	5 0 0	Petty cash	11 15 8
		Dividends	102 10 0
Total	£45,055 4 3	Total	£45,055 4 3

Tincroft Mines	£38,784 9 7
Balance	3,215 10 5
Capital stock	£42,000 0 0

After reading the report and accounts, a question arose whether the latter might not be kept more distinct, as showing the expenditure in working the mine, and that distinguished as applied to the plant or machinery, which was pressed by Mr. Field—in reply to whom, it was stated, that from the nature of mining operations, the system recommended by that gentleman would be found impracticable; while it might be observed, that the accounts, as rendered, showed not only the cost of any particular department, or as applied to the working of the mine, but was rendered in a manner which would at once enable any adventurer to make an abstract or summary, at the same time that it was difficult to meet the views of Mr. Field, in so dissecting the accounts, as to render to each department the exact quota, which was chargeable thereon. From an inquiry made by a shareholder, we gathered that, during the past year, 3000*l.* had been expended in machinery, which would otherwise have been applicable to dividends; while a sum exceeding four times that amount had been expended in the like period on the mine, in prosecuting the workings and developing its resources, the advantages attendant on which would now be realised by the present holders of shares. It further appeared that the East Wheal Crofty lode ran into the sett to the extent of 110 fms., exclusive of that portion when, from the underlay, it would be naturally found in depth; this was in itself most satisfactory, and naturally added to the value of the mine. A considerable expenditure had been incurred in opening on the lodes, and erecting machinery for the purpose of stamping and reducing their tinstuff; and it was highly gratifying to state, that the machinery so constructed, was found to answer the purposes for which it was intended, and to hold out high promise of returns from the economy thus insured. The accounts having been received and adopted, and a vote of thanks passed to the chairman, the meeting separated.

EAST WHEAL KITTY.—At a meeting of adventurers, on Thursday, the 15th inst., held at Pearce's Hotel, St. Agnes, it was resolved, that the accounts now produced, up to the end of October, be allowed, and the balance of 3*l.* 18s. 1d. be carried to the debit of the next account.—That a call of 2s. 6d. per share be now made, to pay off the above balance, and for the further prosecution of the mine, the same to be paid into the hands of the purser forthwith.—From the conversation which took place after the accounts had been passed, it appeared that the driving of the adit level had been suspended, by reason of the poorness of the lode, and the men had since been employed in sinking on a bunch of ore, through which they had driven some short time ago. Some very kindly stones of ore were produced at the meeting, and it was decided that the sinking should be continued until prevented by water, when other measures will have to be decided on at a meeting of the adventurers.

LELANT CONSOLS.—At a meeting, held at the mine, on the 11th instant, statement of accounts was produced, showing—amount received for tin sold, 479*l.* 12s. 5d.; tribute on burrow tin, stamping, &c., 8*l.* 10s. 1d.; amount of 13th call, made 29th August last, at 10*l.* 5s. 4d. a share, 1301*l.* 6s. 8d.=1789*l.* 9s. 2d.—Costs for Aug., 149*l.* 5s.; Sept., 159*l.* 17s. 8*l.*; Oct., 181*l.* 9s. 6d. =490*l.* 12s. 2d.; surgeon and club for three months, 4*l.* 17s. 6d.; balance of account, due to purser, to the end of July, 1846, 929*l.* 18s. 11d.; amount of merchants' bills, &c., for three months, 172*l.* 14s. 4d.: leaving balance in hand, 191*l.* 6s. 3d.—The following report, from Capt. James Roach, was read to the meeting:—The flat-rod shaft has been sunk to the 50 fms., from whence we had intended to drive levels; but, at a meeting of adventurers, held on Tuesday last, it was suggested and agreed to, that another fm. should be sunk before we so commenced driving. In consequence, about 3 ft. have been already sunk, and in doing so a very good lode for tin discovered, 10 in. wide, and of excellent quality. Considering this discovery, I would now recommend 2 fms. to be sunk, instead of one, under the 50, as we shall then have tin ground to drive the ends in; and from the appearances in the level above, we shall have a good piece of tin ground from this level to the 40. The 40 fm. level has been driven west from the above shaft about 26 fms., the last 17 through good tin ground, with a good branch of tin in the end; the same level east has been driven about 20 fms., the first 8 of which is through tin ground, and the remaining 12 in poor ground, and the end is, in consequence, for the present suspended. The 50 fm. level is driven west from the flat-rod shaft about 21 fms., the last 10 fms. through tin ground; and the lode now in the end is 7 in. wide, and of good quality. When the flad-rod shaft has been sunk to the 52 fm. level, and a few fms. west have been driven, we intend sinking a winze from the 40 fm. level through tin ground, to meet the level below—this will open tribute pitches and increase the quantities of tin; as the lode in this shaft has been improving in sinking, I would recommend that the shaft be sunk under the 52, immediately that there is sufficient room to do so. We are now sinking the western shaft, on the south lode, under the adit, which is 9 ft. deep; the lode is about 1 ft. wide, producing good stones of tin, and has altogether a very kindly appearance. We are also driving the 20 fm. west on the same lode, and have about 5 fms. more to get under the shaft now sinking under the adit; here the lode is also producing stones of tin. We intend to communicate this end with the shaft, and afterwards to drive west under some very old workings, which are at and above the adit level. On the whole, the prospects of the mine are very cheering; and, from present appearances, the speculation will turn out a good one to the shareholders.

WHEAL MARY ANN.—A meeting of adventurers was held at the Cornish Arms, St. Blazey, on the 14th inst., pursuant to the resolutions passed on the 19th Oct.—B. BROKENSHAW, Esq., in the chair—when the accounts, having been laid before the meeting, were approved, and the balance of 26*l.* 5s. 7d. carried to the debit of the adventurers. It was further resolved, that measures be taken for enforcing the payment of arrears of calls due, unless the same shall have been paid to the purser on or before the 20th January, 1847; and, furthermore, that a meeting be convened immediately after that period, with the view of taking into consideration the further prosecution of the mine, which in the interim, it was unanimously agreed upon, should be suspended.

WHEAL SETON.—A meeting of adventurers was held at the mine on Friday, the 18th inst.—this meeting was to have been held on the 8th, but was postponed, as stated in our Journal of the 12th—when the following resolutions were passed. The accounts were produced, examined, and allowed, showing—costs for September, 1071*l.* 18s. 3d.; October, 723*l.* 17s. 1d.; merchants' bills, 1816*l.* 13s. 10d.=3612*l.* 17s. 2d.—By copper ores sold, Sept. 3, 1931*l.* 11s. 5d.; ditto, Oct. 1, 3616*l.* 14s. 7d. (less 1-15th lord's dues, 371*l.* 4s. 4d.; and 5s. in the 1*l.* Stannary Court, 7s. 8d.)=5199*l.* 9s. 4d.: showing a profit of 1585*l.* 0s. 2d.; balance due from purser to end of August, 1966*l.* 15s. 4d.=3551*l.* 15s. 6d.; which, after paying dividend of 15*l.* per 99th share, 1485*l.*, leaves a balance in hand of 2066*l.* 15s. 6d.—The following report, from Capts. Paul Rabey and Stephen Lean, was read to the meeting:—The 90 fm. level east, on Bull's lode, lode 1 ft. wide, unproductive. In the 80 fm. level west, on the south caunter lode, lode 3 ft. wide, composed of spar and stones of copper. In the 70 fm. level, west, on south caunter, lode 2 ft. wide, unproductive; in the winze, sinking below this level, lode worth 20*l.* per fm., down 7 fms. In the 60 fm. level west, on ditto, lode 10 ft. wide; we are driving on the north part, which is worth 20*l.* per fm.; the lode, standing to the south, is worth 40*l.* per fm.; in the winze, sinking below this level, the lode is worth 25*l.* per fm. In the 40 fm. level west, on ditto, lode 4 ft. wide, containing stones of copper. In the 80 fm. level west, on the north lode, lode 10 ft. wide, worth 50*l.* per fm. In the 70 fm. level west, on the north lode, lode worth 30*l.* per fm.; in the winze, sinking below this level, lode worth 120*l.* per fm., down 5 fms. In the 60 fm. level west, on ditto, we are driving on the south part of the lode, which is worth 60*l.* per fm.; the north part is worth 12*l.* per fm.; the stopes, in the back and bottom of this level, are worth 150*l.* per fm. In the 50 fm. level west, on ditto, the lode is worth 70*l.* per fm.; the lode in the winze, sinking below this level, is also worth 70*l.* per fm., down 2 fms. The cross-cut north, at the 60 fm. level, is extended 9 fms. from the north lode; the ground is favourable.

WHEAL SOPHIA.—This mine is situated in the parish of Lezant, in the county of Cornwall, near Greston Bridge, and is adjoining the Wheal Greston sett, where upwards of 700 tons of silver-lead and copper ore have been raised, and is divided from Wheal Kelly (where rich specimens of ore have been found), by the river Tamar. We have been driving an adit level on the course of the lode, 45 fms. north of the Greston lode, which we have extended about 40 fms., and are now raising copper ore from this lode, which was discovered last week, very similar to that raised in Wheal Maria and adjoining mines; this lode underlays south about 3 ft. per fm. from 6 to 9 ft. wide. We have also opened upon the Greston lode, and discovered fine stones of ore; this lode underlays north about 3 ft. per fm., which will form a junction with the other lode at the depth of 45 fms.; there is also a lode running east and west, composed of the same mineral. A shaft has been sunk at the top of the hill about 6 fms., and a whim erected; but, owing to the water coming on so fast, we could not sink any deeper, and was obliged to drive on the adit, where we have met with this rich copper. The mine is divided into 256 shares—the greatest part of which are held by parties in London, and are now quoted at 20*l.* per share.

REDRUTH CONSOLS.—A valuable discovery has been made in the 12 fm. level of this mine, and on Tuesday last, a large rock of yellow ore, about 6 cwts., was drawn up by means of the capstan. Several of the adventurers were on the spot to see it landed, and were much pleased with its richness and solidity.

SOUTH WHEAL FRANCIS.—This mine continues to be rich. Doubts have been entertained if the rich course of ore would be found to hold down much below the 50: in the past week, however, the 70 fm. level has gradually improved, and is now worth 30*l.* per fathom.

SILVER-LEAD ORE.—WHEAL CONCORD.—The tenders for silver-lead ore were opened on the 22d inst. The purchasers were Mullins, Brothers, and Co., smelters, London. Messrs. Walker, Parker, and Co., Benjamin Somers, Esq., and J. T. Treffrey, Esq., smelters, also respectively sent in tenders. The tenders were very close on each other.

SILVER-LEAD ORE.—Arrived, in the Thames, this week, the *Despatch*, of Teignmouth, with a cargo of silver-lead ore, consigned to Mullins, Brothers and Co., smelters, London, not yet discharged. Also, the *Endeavour*, with a large cargo from the Isle of Man, also consigned to Mullins, Brothers, and Co. now discharging. Both vessels had been detained off Dover by the weather.

CHALK AND COAL FIRES.—The practical utility of chalk as an artice of fuel has been tested within the last fortnight, according to a Salisbury paper, and with the most satisfactory results. Surrounded with coal, it gives a strong heat, and a clear fire, at half the usual expense; so that to the poor in the chalk districts it must be an invaluable boon.

EYAM LEAD MINES.—It is said, that a company of Sheffield gentlemen are about carrying out the Morewood Sough, Eyam, which unanimous opinion states, will drain the lead mines, in Eyam-edge, of water—a result that would be attended by the attaining therefrom immense mineral wealth.—*Sheffield Iris.*

REDUCTION OF THE HOURS OF LABOUR IN MINES.—The following notice has been extensively circulated, addressed to the miners of South Staffordshire:—"It is agreed by the miners generally, that they reduce their daily labour to 10 hours; that a sixth part of the stents be taken off; and that they give their masters legal notice to that effect on Saturday next, 19th Dec. The reasons for their lessening the hours of labour in mine employments are many. They are exposed to *five* kinds of gases of a most pernicious kind, which they are compelled to inhale while at work; and the present hours of labour are too laborious for the human body to endure for health, education, and recreation." We are not in a position to state how far this proceeding is sanctioned, or will be acted upon, by the miners generally in the district.—*Birmingham Journal.*

MINE ACCIDENTS.

Tipton.—As the workmen were coming up the shaft in the skip, through some cause or other, it went so unsteadily as to come in contact with the side of the shaft, and break the arm of a man named Richard Ballard. They called out to the engineman, who lowered them to the bottom, and they again began steadily to ascend. It was then that an unfortunate lad (W. Hawker), by some means or other, which could not be ascertained, fell out of the skip while it was about 30 ft. up, and was precipitated to the bottom, and killed on the spot.

Accident in Blasting.—As W. and R. Bartle (in the employ of Messrs. Harvey and Co.) were blasting a rock in the cliff near Carnsew, they, having set fire to the fuse, after waiting a considerable time for the explosion, which did not take place, proceeded to dig or pick out the hole without water; the charge ignited and exploded, literally blowing up Bartle several feet from the ground, fracturing his arm, and maiming various parts of his body.

Wheal Trevena, Camborne.—As T. Williams was crossing a shaft, at the 16 fm. level, in coming to surface, he accidentally fell a distance of 26 fms., and received such injuries as to occasion his death.

Allan's Quarry, Coxgreen, Durham.—As J. Mara was corving clay, he was knocked down by a portion, which unexpectedly gave way, at a height of about 13 ft.—he died from the injuries received.

Bolsover.—W. Chapman was killed by an explosion in the coal works at Duckmanton. Two companions were much burnt, but are recovering.

CORNWALL AND DEVON CENTRAL AND PLYMOUTH RAILWAY.—On Friday, the 18th inst., a large and influential meeting of the inhabitants was held in the Guildhall of Plymouth, for the purpose of considering and adopting such measures, as might be beneficial to the town and neighbourhood. The Earl of Morley, J. Chaplin, Esq. (the chairman), L. Locke, Esq. (the engineer), and P. L. Campbell, Esq. (the secretary of the South Western Company), were present—T. H. Bulteel, Esq. (the mayor), presided, and the resolutions were carried unanimously.

The Ambergate, Nottingham, and Boston Railway Company, are taking the preliminary steps for providing themselves with material and plant, and propose, for this purpose, to take stock to the extent of 12,000 tons of malleable rails, 3000 of cast-iron chairs, and 169,000 sleepers or supports. The tunnel, on either side of Grantham, is about to be commenced.

The new line of railway from Carlisle to Lancaster has been opened for two trains in each direction, and trains have arrived at their destination without interruption from snow, notwithstanding its elevation in places is nearly 1000 ft. above the sea.

Current Prices of Stocks, Shares, & Metals.

STOCK EXCHANGE, Saturday morning, Eleven o'clock.

MINES.—The mining share market in general maintains a firm position. In several instances an advance has taken place in the price of shares, arising from the improvements which have been discovered—of these we may notice Trephena, near Camborne, which have been done at 145*l.* in the county. Holmbush has considerably improved west of the great cross-course, and buyers are to be found at 18*l.* Tincroft are sought for at 11*l.* per share—this most likely is in consequence of the dividend of 10s. per share, declared on Thursday last. West Wheal Marias are inquired for at rather lower prices, but not from any alteration in the lode. Wheal Fortescues are better, and in demand, from its proximation to Wheal Maria. South Friendship Wheal Anne are also in request. Several transactions have taken place in the following mines—viz.: Wheal Seton, Condurrow, Cleveland, Fortescue, West Wheal Maria, Wheal Franco, Wheal Trelawney, Trehanes, Great Rungton Consols, Holmbush, Lewis, Tamar Consols, South Tamars, Tincroft, Treviskey and Barrier, Grambler and St. Aubyn, Kircudbrightshire, Concord, Lamherooe, Trewallack, Wheal Blencowe, Wheal Benny, &c., &c. We hear that a considerable improvement has been discovered in Lanivet Consols; but we are not advised of any sales at an advance as yet—and that a few shares in Trewallack have been sold at great advance on our quotation; but as shares have been sold at the price marked in our list, we cannot take that referred to as being the market price. A Wheal Seton was sold on Thursday, and, from the agent's report, in another column, we find the mine never looked so well before; and were she divided into a greater number of shares (1-99th), we are of opinion that a vast deal of business would be done in her. We take this mine to be the next in rotation to Wheal Maria in point of profits, and the extent of ore ground open, or lodes worked on, making her regular profits of upwards of 9000*l.* per annum. Several Great Rough Torr Consols shares have changed hands this week at our present quotation; twenty-two 512ths were sold for 550*l.* We would take this opportunity of remarking, that the discrepencies which are sometimes apparent in our lists, between the actual prices known to have been made, and the quotations given, do not arise from any falling off of the returns, or alterations in the lodes; but, from those peculiar circumstances, which prompt parties to send their shares to, and the number previously in the market; and, again, our list sometimes present, a quotation at a lower or higher figure than shares may be offered at; but our invariable rule is to give the price at which we know the last sale was effected—consequently, our operations do not fluctuate with the price sought for, but at which business has been actually done. We find great difficulty in so long a list to arrive at correct prices, still we exercise every caution and exertion to obtain so correct a one as we can possibly do. In the foreign mines, we do not find much business has been done, but Altens, Australian, Real Del Monte scrip, and loan notes, are sought for at our present quotations.

RAILWAYS.—This being Christmas week, the share market has been extremely monotonous, as the "holiday makers" have scarcely made their appearance in Capel-court; and the few transactions that have been done were on a limited scale, being chiefly confined to Birmingham and Oxfords, and Birmingham and Shrewsburys. At Liverpool there has been an improvement in Manchester, Leeds, and Sheffield, and Birmingham and Oxfords have been done at 9¾ prem., and North Staffordshire at 4¼ prem. The Manchester market has been steady, compared with late business; while at Birmingham prices have improved generally—as also at Leeds, Hull, and Bristol. Very little has, however, been done in foreign, but prices continue steady.

MEETINGS.—*Waterford, Wexford, and Wicklow:* the first general meeting of the shareholders was held on Monday; Lord Courtown, who was in the chair, announced the arrangements contemplated to be made by the directors, who calculate that one call of 1*l.* 10s. per share, payable in February, and a second 1*l.* in November, are all that is likely to be required in 1847; and they propose to allow 4 per cent. on calls paid up, and 5 per cent. on payments in advance of calls. The balance sheet showed receipts from deposits, 112,799*l.*; disbursements, 39,853*l.* 16s. 4d.: balance, 72,925*l.* 3s. 8d. The report having been read, the meeting was adjourned until the 17th February, for the purpose of considering the affairs of the company, and to decide if they should proceed, and give time for making arrangements, which would be satisfactory to the proprietors generally.—*Wilts, Somerset, and Weymouth:* was held on Tuesday—the object of which was to consider the expediency of selling or leasing the new works to the Great Western. In consequence of the scanty attendance, the subject was postponed till the next general meeting in February.—*Staines:* a well-attended meeting was held on Wednesday at Staines, for the purpose of considering the competing schemes between that town and London, when a resolution in favour of the South Western project was unanimously adopted.—[Other meetings will be found under the head of Proceedings of Public Companies.]

NEW SHARE & MONEY MARKET, ROYAL EXCHANGE, *LONDON.*

SHARES FOR SALE THIS DAY.

(The public can purchase any of these shares without paying commission.)

Shares.		*Per Share.*
100	Wheal Betsey, 3*l.* 5s. paid	£1 0 0
2	Barristown Mine	26 0 0
20	Remington's Manchester	0 10 0
10	Victoria Tin Mining	1 2 6
100	Midland, Barnsley, Sheffield, Dewsbury, Leeds, & Bradford, rem.	0 3 6
10	Western Gas-Light, 7*l.* paid	5 7 6
1	Shrewsbury and Birmingham, scrip	3 10 0
10	Bristol and Poole Harbour	2 7 0
10	Consolidated Tretoll Mining	0 12 6
20	Windsor, Staines, and South-Western	2 19 6
10	Australian Mining	5 0 0
10	Galway and Kilkenny	0 2 6
15	Waterford, Wexford, Wicklow, and Dublin, scrip	0 7 6
20	Sheffield, Buxton, and Leek Potteries, remanets	0 2 6
10	Galway and Ennis, 2*l.* 15s. paid	0 7 0
60	Belgian and Eastern Junction	0 10 0
25	Great Leinster and Munster, 7*l.* 10s. paid	3 0 0
10	Marine Insurance	11 0 0
39	National Reversionary Investment, ex. div.	19 10 0
20	Great Munster	0 10 0
10	Galway and Kilkenny	0 4 6
25	Cheltenham and Oxford	2 [illegible] 0
10	(256ths) Wheal Louisa Lead and Copper Mine	10 0 0
10	(256ths) Pentuan Wheal Mary Copper Mine	4 0 0
150	Victoria Tin Mining Company	1 2 6
3	Buckinghamshire scrip	2 1 0
40	Belfast and County Down	0 5 6
40	Great North of India, at 5s. 6d., 35	0 5 3
20	Neptune Marine Insurance	9 0 0
20	Rugby, Derby, and Manchester, remanets	0 8 0
50	Southampton, Manchester, and Oxford Junction	0 6 0
35	Western Gas Light, 3*l.* paid	2 0 0
15	Reading, Guilford, and Reigate	0 18 0
15	Commercial and General Life Assurance	0 10 0

SHARES WANTED, THIS DAY.

(The public can supply any of these shares without paying commission).

Shares.		*Per Share.*
2	Eastern Counties Consolidated	£22 17 6
50	London and South Western, scrip	5 15 0
10	London and Blackwall, new	4 5 0
20	London and South Western, new	20 2 6
1	Edinburgh and Glasgow, quarters	18 15 0
30	Great Southern and Western of Ireland	28 0 0
5	Luxembourg	0 12 6
40	South Wales	3 5 0
500	Madras Southern	0 1 0
10	Union Bank of London	11 10 0
5	Asturian Mine, 8*l.* paid	3 10 0
12	Chester and Holyhead	25 0 0
10	Commercial Gas	5 7 6
500	Essex and Suffolk, remanets, at 2s. 3d., and 500	0 2 9
500	Exeter, Dorchester, and Weymouth, remanets	0 1 2
50	Great Indian Peninsular	0 3 0
7	Kent Waterworks	90 0 0
480	London and South Essex, remanets	0 2 9
30	London, Bristol, and South Wales Direct	1 0 6
2	North Staffordshire	pm. 4 0 0
50	Newry and Enniskillen, 7*l.* paid	pm. 0 15 0
500	Northumberland and Lancashire, remanets	0 2 9
500	Rugby and Huntingdom, remanets	0 6 0
1	Reversionary Interest Society (King's Arms Yard)	100 0 0
40	Yorkshire and Glasgow Union	0 16 6
10	Eastern Counties, York Extension	3 10 0
30	Manchester, Buxton, and Matlock	3 2 0
10	Cork, Black Rock, and Passage	0 5 0
150	North Kent, remanets	0 2 6
10	New Peninsular and Oriental Steam Nav., with div.	prem. 18 10 0
100	Eastern Counties, perpetual, 5 per cent, No. 2	7 0 10
2	Manchester and Leeds	105 0 0
5	Ipswich and Bury St. Edmunds	11 0 0
500	Worcester, Hereford, Ross, and Gloucester, remanets	0 2 9
400	Wexford and Carlow	0 7 6
12	Eagle Life Insurance	5 0 0
3	Eastern Counties York Extension	3 10 0
500	Shrewsbury and Hereford, remanets	0 4 9
20	Central of Spain	0 5 0

The public are particularly requested, in sending shares from the country, to enclose them in a registered letter, addressed to STEVENS, HANSARD, & CO., Transfer Office, 5, Royal Exchange.

IMPORTANT TO IRON MERCHANTS.—In the High Court of Justiciary, Edinburgh, a case, in which Messrs. Vincent, Higgins, and Sons, iron merchants in Liverpool, were pursuers; and Messrs. Dunlop, Wilson, and Co., iron merchants in Glasgow, were defenders—came before the Lord Justice-General and a jury. The question in dispute arose out of an offer made by the defenders to the pursuers of 2000 tons of pig-iron, at 65s. per ton; but, as the pursuers did not answer the letter containing the offer by return of post, the defenders held they were freed from it. The issue was couched as follows:—Whether, about the end of January, 1845, the pursuers purchased from the defenders 2000 tons of pig-iron at the price of 65s. per ton? and whether the defenders wrongfully failed to deliver the same, to the loss, damage, and injury of the pursuers? Damages laid at 6000*l.*? The pursuers produced six witnesses to prove that, according to the practice in mercantile matters, they were not bound to answer in course of post, while the defenders brought forward an equal number to prove that the contrary was the practice, to render the transaction obligatory. The jury, after a short deliberation, returned a verdict for the pursuers—damages, 1500*l.*

IMPROPER WORKING OF A STAFFORDSHIRE COLLIERY.—In the Court of Chancery, on Tuesday, in the case Bagnall *v.* Whitehouse, a motion was made to discharge an order of the Vice-Chancellor of England, directing the defendant (Whitehouse) to pay into court a sum of 700*l.* The plaintiffs and defendants are owners of large collieries in Staffordshire, which adjoin each other. The defendants, having carried their workings into the plaintiffs' land, an injunction was obtained to restrain them from getting any more coal in that direction; and an order was also made, referring it to two persons to certify the amount of coal already got; and this certificate was to be evidence in the cause. These referees, having certified the value of the coal so improperly obtained to be the above sum of 700*l.*, the plaintiffs moved and obtained the order now complained of, for the defendants to pay that sum into court. The Lord Chancellor said, that in cases of this kind, two courses were often taken to avoid the expense of proceedings before the master: one course was, to refer everything to arbitrators, who then took the place of the court, and whose decision was final. The other was the course pursued in the present case—namely, to direct a reference to persons to inquire respecting certain facts, with a view of guiding the court. The result of such an inquiry was not final, as the certificate was only to be evidence in the cause. The defendants were at liberty, if they thought fit, to go into evidence, to show that the certificate was erroneous, and, therefore, it was obviously wrong to order the defendants to bring the money into court in this stage of the cause; the order of the Vice-Chancellor must, therefore, *be reversed.*

HIGH TOR TUNNELS.—Tuesday, the 15th inst., being the day appointed for letting these two important lengths of tunnelling on the Ambergate and Buxton line of railway, a large assemblage of contractors from all parts of the county were in attendance, to compete for the same; and it was not until a late hour of the day that the contracts were awarded to Mr. John Wheatcroft, engineer, of Wirksworth, along with two other respectable contractors, Mr. B. Buckley and Mr. J. Clayton, in the neighbourhood. The tenders, as might be expected, varied very considerably in the amount; but, from the well-known capabilities of Mr. Wheatcroft and his partner, as practical miners, the directors, it is hoped, will find their decision awarded to the proper parties. The letting took place at Mr. Greaves's, the Old Bath and Royal Hotel, Matlock.

RAILWAY SHARE LIST.

RAILWAYS.	Paid	Last week.	Last night.
Aberdeen	£25	23½	25¼
Birmingham and Gloucester—100*l* shares	100	—	129–8½
Birmingham and Oxford Junction—20*l* shares	2	9½	11½
Bristol and Exeter—100*l* shares	75	77½	75
Caledonian—50*l* per share	25	29	29⅞
Chester and Holyhead—50*l* shares	27½	21½	25½
Eastern Counties—25*l* shares	14⅞	22⅞	23½
Edinburgh and Glasgow—50*l* shares	50	75½	77
Great Southern and Western (Ireland)—50*l*. shares	27½	27⅞	28½
Great North of England—100*l* shares	100	237	238
Great Western—100*l* shares	85	130	126
Lancaster and Carlisle—50*l* shares	50	—	—
Leeds and Bradford	30	—	75½
Liverpool, Manchester, and Newcastle Junction	2½	2½	2½
London and North Western	stock.	195	194½
London and Blackwall	Av. 16*l* 13*s* 4*d*	8½	8½
London and Brighton—50*l* shares	50	58½	59
London and Croydon—guaranteed 5 per cent	13⅞*l*	—	22
London and Greenwich	Av. 12*l* 15*s* 4*d*	9½	9⅞
London and South Western	Av. 41*l* 6*s* 10*d*	63	62½
London and York—50*l* shares	2½	2⅞	2⅞
Manchester and Leeds—100*l* shares	82	—	108
Manchester and Birmingham—40*l* shares	40	—	—
Manchester and Southampton	2	1½	1½
Midland	Stock	127½	128
Newcastle and Berwick—25*l* shares	20	34⅞	34⅞
Norfolk	Stock 100*l*	130½	129
North British—25*l* shares	25	37	36½
Northern and Eastern—50*l* shares	50	77	76
North Staffordshire—20*l* shares	5	8⅞	9½
Oxford, Worcester, and Wolverhampton	17½	12⅞	13
Scottish Central—25*l* shares	15	—	22
Scottish Midland—25*l* shares	12½	14½	14½
Sheffield and Manchester—100*l* shares	100	—	—
Shrewsbury and Birmingham	3	5⅞	5½
South Devon—50*l* shares	40	32	32½
South Eastern and Dover	Av. 33*l* 2*s* 4*d*	38⅞	40
South Wales—50*l* shares	5	3½	3⅞
Vale of Neath	2	1⅞	1⅞
Waterford and Kilkenny	11	5	5½
Welsh Midland	2½	—	⅞
York and Newcastle—25*l* shares	25	38½	38
York and North Midland—50*l* shares	50	95	94

FOREIGN RAILWAYS.	Paid	Last week.	Last night.
Boulogne and Amiens—20*l* shares	16	13⅞	15½
Dutch Rhenish—20*l* shares	6	4⅞	4⅞
East Indian	½	⅛	⅛
Great Northern of France (constituted)	5	10⅞	10⅞
Luxembourg	4	¾	¾
Namur and Liege—20*l* shares	8	3⅞	3½
Orleans and Vierzon—20*l* shares	10	14	13⅞
Orleans and Bordeaux—20*l* shares	6	8⅞	8⅞
Paris and Lyons Constituted	5	5½	8½
Paris and Orleans—20*l* shares	20	49	49
Paris and Rouen—20*l* shares	20	—	35½
Rouen and Havre—20*l* shares	20	—	—
Sambre and Meuse—20*l* shares	10	4½	4½
West Flanders	6	—	3

RAILWAY TRAFFIC RETURNS.

From these returns, it will be seen, that the amount of traffic for the last week, on nearly 2760 miles of railway, was 131,141*l.*, thus accounted for:—66,054*l.* for the conveyance of passengers only, 36,557*l.* for the carriage of goods, and a remainder of 28,530*l.* for passengers and goods together, not respectively apportioned; being an increase over the corresponding week of last year of 14,892*l.*

Name of Railway.	Lgth. Rway.	Present actual cost.	Last Div.	Traffic Returns. 1846	1845
Arbroath and Forfar	15	£142,900	3*p.c.*	—	£175
Chester and Birkenhead	15	658,293	2½	—	464
Dublin and Drogheda	32	699,975	3⅞	608 15 6	603
Dublin and Kingstown	6	349,736	9	553 13 8	563
Dundee and Arbroath	17	156,324	6	189 11 2	214
Durham and Sunderland	19	302,118	2	—	456
E. Counties & North. & East.	161	4,746,113	6½	9005 0 11	7036
Eastern Union	—	—	—	—	—
Edinburgh and Glasgow	46	2,112,136	6	3039 18 2	2201
Glasgow, Paisley, and Ayr	53	1,301,381	7	1905 10 8	1784
Glasgow, Paisley, & Greenock	23	829,427	2	784 4 10	680
Gravesend and Rochester	7	82,828	—	—	113
Great Western	241	8,885,605	8	17366 12 5	17355
Hartlepool	—	—	—	—	979
London and North Western	440½	16,327,526	10	36582 0 0	32652
London and Blackwall	4	1,081,273	1½	—	644
London & Brighton & South Coast	113	4,670,721	5	6004 0 0	4186
London and South-Western	106	3,648,547	9	5703 16 11½	5516
Manchester & Leeds	117	4,636,556	7	7689 0 0	4858
Manchester, Bolton, & Bury	10	842,725	5⅞	—	845
Midland Company	331	8,831,195	7	17929 0 0	16231
Newcastle and Carlisle	65	1,137,385	5	1278 0 0	1718
Norfolk	59	985,080	6	1264 0 0	1089
North British	72	1,461,195	—	1095 0 0	—
Preston and Wyre	29	432,014	2½	495 17 1	420
Sheffield and Manchester	49	1,633,331	5	1848 0 0	949
South Devon	15	778,976	—	286 19 11	—
South-Eastern and Dover	120	6,613,535	3⅞	6361 11 5	5452
Taff Vale	30	690,229	6	1251 0 0	1162
Ulster	25	358,353	5½	—	583
York and North Midland	162	2,092,979	10	5142 6 1	4758
Northern of France	260	—	4	—	—
Orleans and Bordeaux	72	599,040	4	—	—
Paris and Orleans	82	2,082,916	9½	—	5788
Paris and Rouen	85	1,995,306	8	—	4626

PRICES OF MINING SHARES.

Shares.	BRITISH MINES. Company.	Paid.	Price.
1024	Alfred Consols	4½	50
235	Andrew and Naugles	28½	30
1000	Barristown	4½	30
4000	Bedford	2½	3½
128	Besore Lead Mine	14	30
320	Birch Tor Tin Mine	21½	14½
8000	Blaenavon	50	40
100	Botallack	175	300
120	Brewer	—	5
10000	British Iron, New, regis.	10	19
—	Ditto ditto, scrip	10	19
128	Budnick Consols	52½	45
100	Bwlch Cwmerfin	20	—
1000	Callington	19	25
256	Caradon Consols	45	18
256	Caradon Copper Mine	9½	1
256	Caradon Mines	15	24
256	Caradon United	24	10
256	Caradon Wh. Hooper	12	7
1000	Carn Brea	15	100
114	Charlestown	—	200
166	Cleveland	9	5
1900	Combmartin	5½	4½
1000	Comblawn	¾	2
128	Comfort	—	45
5000	Con. Tretoil Mining Ass.	5	¾
128	Condurrow	36	63
2560	Cook's Kitchen	—	4
1000	Copper Bottom	1	5
1024	Cosheen	4½	30
240	Craddock Moor	15½	20
128	Creeg Braws	120	200
500	Cubert Mine	12	27½
7100	Derwent	8½	5
1024	Devon & Courtney Con.	5	5½
1000	Dhurode	2	5
186	Dolcoath	—	30
10000	Durham County Coal	45	9
256	East Alvenney	3	10
112	East Caradon	40	40
2048	East Crowndale	3½	1½
512	East Combe Silver-Lead	6½	20
128	East Pool	5	14
100	East Relistian	15	17
9000	East Tamar Consols	1½	2½
—	East Wheal Albert	1	3
94	East Wheal Crofty	—	275
256	East Wheal Fortune	1½	3
256	East Wheal Kitty	¼	1
128	East Wheal Rose	50	1100
123	East Wheal Seton	9	25–30
512	Fowey Consols	—	40
20000	Galvanised Iron Co.	10	9½
10000	Gen. Mining Co. for Irel.	⅜	¼
1000	Godolphin	—	—
256	Gonamena	21	70
128	Gover	23	200
244½	Grambler & St. Aubyn	—	40
100	Great Consols	1000	400
256	Great Callestock Moors	11⅞	12
2560	Great Michell Consols	2	4
256	Great Resugga Moor	2	5
512	Gt. Wh. Rough Torr Con.	2	25
100	Grogwinion	5	—
1000	Gunnis Lake	1½	3
256	Gwinear Consols	5	25
1000	Hanson	14	3
1000	Harrowbarrow Old Mine	5½	2½
1000	Harrowbarrow Consols	2	¾
800	Hawkmoor	3	2
6000	Heignston Down Con.	½	2½
256	Herodsfoot	14	5
10000	Hibernian	12½	1
—	Hobb's Hill	4	3
1000	Holmbush	18	18
256	Ivy Tor	1½	2½
827	Kirkcudbrightshire	4½	5½
2048	Lamherooe Wh. Maria	8½	7
2048	Lanivet Consols	4	2
200	Larkholes	1	3
160	Levant	—	90
1000	Lewis	15	14
1280	Llancynfelin	6	10
256	Lostwithiel Consols	6	8
128	Ludcott	3	3
4000	Marke Valley	10	3½
5000	Mendip Hills	1¾	¼
20000	Mining Co. of Ireland	7	11½
152	Nanterrow Consols	24½	12½
128	North Fowey Consols	20	22
100	North Pool	11	65
70	North Roskear	10½	300
256	North Treburget	4	5
100	North United	41	20
256	North Wh. Leisure	1½	4
128	North Wh. Providence	2½	7
256	North Wheal Rose	26½	13
15000	Northern Coal Co.	23	2
600	Old Delabole Slate Co.	25	45
128	Par Consols	—	900
256	Pembroke	½	2½
256	Penhallow Moor	15	4
6000	Pennant	1	1½
100	Penrhiw	30	65
128	Pen-y-Cefn Mine	50	55
1280	Perran St. George Un.	13	20
128	Perran Wh. Virgin	9½	38
512	Plymouth Wh. Yeoland	2½	5½–6
2048	Prince Edward	1½	1½
256	Redruth Consols	3	14
10000	Rhymney Iron	50	30
256	Rose Consols	10	3
1000	Rosewall Hill	1	5
—	Shotts Iron Company	50	70
2500	Silver Valley	4	3
256	Sourton Consols	3½	3
128	South Caradon	10	350
2000	South Dolcoath	2	—
256	Sth. Friendsh. Wh. Ann	14	16
200	South Harvannah	23	26
9000	South Tamar	½	⅝
194	South Tolgus	2½	6
800	South Towan	10	1½
256	South Trelawney	15½	14

Shares.	BRITISH MINES—*continued.* Company.	Paid.	Price
128	South Yeoland	16½	20
128	South Wheal Basset	—	150
124	South Wh. Francis	67	240
256	South Wh. Hope	—	5
1000	South Wh. Maria	2¾	2
256	South Wheal Rose	11½	1
10000	Southern & Western, Irish	2	4–5
256	St. Austell Consols	7	16
94	St. Ives Consols	—	500
1000	Stray Park	43	21
9600	Tamar Consols	3	5½
1024	Tavy Consols	1½	3
6000	Tincroft	7	11
256	Ting Tang	89	30
128	Tokenbury	140	15
256	Trehane	2	22
5000	Treleigh Consols	6	3½
256	Trenow Consols	—	30
96	Tresavean	10	225
120	Trethellan	5	20
120	Treviskey and Barrier	61	135
256	Trewallack	—	22½
128	Trewellard	12	25
000	United Hills	5	1½
4100	United Mines	300	750
10240	Victoria Tin	1	1½
256	Wellington Mines	15	25
128	West Basset	45	10
256	West Caradon	20	190
128	West Cargoll	2	12
512	West Fowey Consols	40	35
—	West Kekewich Consols	—	3
256	West Providence	—	15
200	West Seton	—	80
120	West Trethellan	5	25
256	West United Hills	4	4
256	West Wh. Friendship	7½	4
3845	West Wheal Jewel	11	2½
2560	West Wh. Maria	1½	3½
256	West Wheal Shepherd.	—	6½
256	West Wheal Tolgus	21½	9
256	West Wheal Treasury	14½	12½
240	Westerlake	3	3
5200	Wicklow Copper	5	15½
184	Wheal Adams	41	30
1000	Wheal Agar	—	—
256	Wheal Albert	10	8
128	Wheal Acland	13	2
256	Wheal Allen	½	4
368	Wheal Anderton	10½	20
128	Wheal Ann	—	50½
128	Wheal Arvose	2	5
2560	Wheal Barbara	1½	1½
256	Wheal Blencowe	—	10
256	Wheal Byon Consols	½	¼
136	Wheal Clifford	—	190
1024	Wheal Concord	5½	5½
512	Wheal Elizabeth	2½	3
256	Wheal Fortescue	5½	10
2048	Wheal Frederick	2	2
384	Wheal Franco	25	24
512	Wheal Fortune Consols	1	6
256	Wheal Gill	19½	18
128	Wheal Harriet	45	48
2048	Wheal Holwell	1½	1½
256	Wheal Jane	6	21
265	Wheal Kendall	11½	5
256	Wheal Kekewich	4	4
256	Wheal Louisa	5½	10
256	Wheal Maria (Hayle)	14½	28
1024	Wheal Maria	1	500
4000	Wheal Martha Consols.	5	2½
256	Wheal Mary Ann	5	70
1024	Wheal Mary (Calstock)	5	1–2
256	Wheal Mary Consols	34	25
256	Wheal Mary (Lanivet)	2½	4
256	Wheal Mary Pentuan	1½	4
256	Wheal Maud	1½	4
128	Wheal Metha	21	110
256	Wheal Norris	9	2½
128	Wheal Pollard	12½	12
210	Wheal Prospect	4	11½
128	Wheal Providence	34	40
128	Wheal Reeth	1	60
128	Wheal Rose	60	50
99	Wheal Seton	150	820
1024	Wheal Spearne	1½	8
256	Wheal Sisters	27½	20
260	Wheal Trelawney	7½	125
256	Wheal Tremaine	1½	8
128	Wheal Trew	—	21
256	Wheal Trewennan	—	10
128	Wheal Venland	12½	10
256	Wheal Victoria	2	2
127	Wheal Virgin	—	50
256	Wheal Vlow (Perranz.)	⅝	⅝
1024	Wheal Walter	4	3
256	Wheal Williams	2	18

Shares.	FOREIGN MINES.	Paid.	Price
5000	Alten Mining Company	14½	3½
15000	Asturian Mining Co.	6	3
20000	Australian	2	5½
10000	Anglo-Mexican Co.	100	1
3374	Ditto Subscription	25	2½
2000	Bolanos	150	6
12000	Ditto Scrip	15	—
10000	Brazilian Imperial	20	2½
12000	Cobre Copper Co.	40	19–18½
8500	Colombian Co. regis.	55	4½ (for both)
5000	Ditto Scrip	—	
10000	Copiapo Mining Co	14	2½
20000	General Mining Ass'n.	20	15½
5051	Mexican Company	59	—
12000	Mocaubas & Cocaes	25	6½
29320	Rl. del Monte, regis. / Ditto unregistered	28½	av. 3½
	Ditto Red Debentures	—	21
	Ditto Black ditto	—	18
	Ditto Loan Notes	150	120
7000	Royal Santiago	10	7½
2000	Pachuca Mines	3	3½
11000	St. John del Rey	15	8½
43174	United Mexican	28½	3½

** We should feel greatly obliged by agents, or others interested, furnishing us with such corrections for our Share List as we may not have received through our usual channels of information—our object being, to present as accurate a list of prices as can be obtained—to procure which, we solicit the aid of correspondents in general.*

LATEST CURRENT PRICES OF METALS.

LONDON, DECEMBER 24, 1845.

	£ s.	£ s. d.
IRON—Bar *a*..Wales..*ton*	8 15—	9 0 0
„ ..London	9 15—	10 0 0
Nail rods „	0 0—	10 15 0
Hoop (Staf.) „	0 0—	12 0 0
Sheet „ „	0 0—	13 0 0
Bars „ „	11 0—	11 10 0
Welsh cold-blast foundry pig	4 5—	5 5 0
Scotch pig *b*, Clyde	3 12 6	3 15 0
Rails, average	9 12 6	9 15 0
Russian, CCND *c*	0 0—	——
„ PSI	0 0—	——
„ Gourieff	0 0—	——
„ Archangel	0 0—	13 10 0
Swedish *d*, on the spot	0 0—	11 10 0
„ Steel, fagt.	0 0—	16 5 0
„ „ kegs *e*	15 0—	15 5 0
COPPER—Tile *f*	0 0—	87 10 0
Tough cake	0 0—	88 10 0
Best selected	0 0—	91 10 0
COPPER—Ordin. sheets, *lb.*	0 0—	0 0 10
„ bottoms	0 0—	0 0 11
Chilian, in cakes	0 0—	——
TIN—Com. blocks *g*..*cwt.*	0 0—	4 18 0
„ bars	0 0—	4 19 6
Refined	0 0—	5 1 0
Straits *h*	0 0—	4 18 0
Banca	0 0—	5 2 0
TIN-PLATES—Ch., IC *i*, box	1 11—	1 13 0
„ IX	1 17—	1 19 0
Coke, IC	0 0—	1 8 0
„ IX	0 0—	1 14 0
LEAD—Sheet *k*..ton	0 0—	19 5 0
Pig, refined	0 0—	21 0 0
„ common	0 0—	18 10 0
„ Spanish, in bd.	17 10—	18 0 0
„ American	0 0—	——
SPELTER—(Cake) *l*	19 12 6	19 15 0
ZINC—(Sheet) *m* export.*	0 0—	28 0 0
QUICKSILVER *n*..*lb.*	0 0—	0 4 6

a Discount 2½ per cent. *b* Net cash. *c* Discount 2½ per cent. *d* Ditto. In kegs ½ and ⅝-inch. *f* Discount 3 per cent. *g* Ditto 2½ per cent. *h* Net cash. in bond. *i* Discount 3 per cent. *k* Ditto 2½ per cent. *l* Net cash. *m* Discount 1½ per cent. *n* Discount 1½ per cent. * For home use it is 32*l.* per ton.

[*From our Correspondent.*]

The demand for Scotch pig-iron has improved this week, several sales of mixed Nos have been made at 73s., with short prompt to consumers, whose stocks are said to be low but for exportation nothing is reported; 75s. is asked for mixed Nos. for spring delivery. In other descriptions of iron, and metals generally, nothing new to mention, very little having been done this week, and prices remain as last week.

GLASGOW, DEC. 23.—We have more inquiry this week in this article, and holders show less disposition to sell; this has induced a slight rise in price. The demand is chiefly for time contracts, and delivery in spring. For settlement in 14 days, the price asked to-day for mixed Nos. is 73s.; and for bill at four months and spring delivery, 75s.

COAL MARKET, LONDON.

PRICE OF COALS PER TON AT THE CLOSE OF THE MARKET.

MONDAY.—Carr's Hartley 21 6—Bleangwaur 22—Field and Co.'s Silkstone, 21.—Ships at market, 12; sold, 10; unsold, 2.

WEDNESDAY.—Adair's Main 17—Original Tanfield 17—Tanfield Moor 19 6—Wall's End Belmont 22—Hetton 22 9—Lambton 22 9—Bleangwaur 22.—Ships, 11; sold, 10.

HULL, THURSDAY.—North British, which last week was the stock most in request, is now flat; and it would be difficult to move much weight off it without submitting to a decline—the thirds support their price the best. Northern Counties Union, and Blackburn, Atheroe, and North-Western, are strong, and look as if they would advance. Darwens are better, both in price and demand; with regard to intrinsic value, the Lancashire line is very low. Glasgow, Dumfries, and Carlisles have been sought after, and we believe the value of the stock is better known in the north than with us. A sudden advance in the East Anglia lines, which seem forgotten for the time, would not at all surprise us—premising, of course, the acceptance of the terms by the Eastern Counties, which a week or ten days will decide. The market generally is good—even the *Times* says so, and that journal is not apt to give florid statements with regard to shares, generally speaking.

THAMES TUNNEL COMPANY.

The number of passengers who passed through the Tunnel in the week ending Dec. 19, was 20,978; amount of money, £87 8s. 2d.

MEETINGS OF SCIENTIFIC BODIES DURING THE WEEK.

Society.	*Address.*	*Day.*	*Hour.*
Geographical	3, Waterloo-place	Monday	8½ P.M.
Botanical	20, Bedford-st., Covent-gar.	Friday	8 P.M.
Asiatic	14, Grafton-street	Saturday	2 P.M.
Westminster Medical	27 A, Sackville-street	Saturday	8 P.M.

THE GREAT BRITAIN STEAMER.—The directors, it appears, have finally abandoned all intention of attempting to raise this ill-fated vessel, having addressed a letter to that effect to Mr. M. Stead, of Wolverhampton, in which the ingenuity of his plan was acknowledged, Capt. Claxton, at the same time, stating it to be the 412th received by them.

DUBLIN AND HOLYHEAD PACKETS.—The Dublin and Holyhead Railway Company are about to build four iron steam-packets, to run to and from Dublin, in conjunciion with the railway. They are to be of first-rate designs, and in order to encourage competition, and secure good vessels, they have most liberally determined to offer a premium of 1000*l.* to the builder of the boat which, in the course of 12 months, makes the quickest passages with the smallest amount of repairs.

IRISH RAILWAYS.—The Board of Works has given its sanction to the full amount of the presentation, for 16,000*l.*, to the Waterford and Limerick Railway, at Cahir sessions, and West Iffa and Offa barony will be enabled to afford employment to every man therein in want of it.

FRENCH RAILWAYS.—The Minister of Public Works, has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.

COPPER ORES.

Sampled Dec. 9, and Sold at Andrew's Hotel, Redruth, Dec. 24, 1846.

Mines.	*Tons.*	*Price*
United Mines	126	£3 18 0
ditto	124	4 16 6
ditto	122	4 15 0
ditto	107	3 11 6
ditto	101	5 5 6
ditto	90	3 15 6
ditto	88	3 9 6
ditto	80	4 18 6
ditto	77	5 5 6
ditto	68	6 5 6
ditto	64	3 13 0
ditto	50	5 15 6
ditto	37	3 16 0
Tresavean	97	5 7 6
ditto	91	6 6 6
ditto	57	2 7 6
ditto	55	2 9 0
ditto	46	2 14 6
ditto	44	2 17 6
ditto	34	4 6 0
South Caradon	99	8 15 0
South Caradon	80	£5 11 0
ditto	64	8 7 0
ditto	52	5 15 0
ditto	50	6 1 0
ditto	12	3 18 0
West Wh. Jewel	69	2 2 6
ditto	63	4 7 6
ditto	50	3 6 0
ditto	46	4 4 0
Par Consols	96	4 17 6
ditto	62	4 18 6
ditto	49	4 7 0
Treleigh Consols	102	3 15 0
ditto	41	9 16 0
ditto	36	3 12 6
Wh. Sisters	81	6 11 0
North Downs	44	6 13 6
ditto	24	4 15 6
Penstruthal	11	4 4 6
ditto	2	12 10 0
North Tolgus	5	3 1 0

TOTAL PRODUCE.

Mines	Tons	Amount
United Mines	1134	£5119 17 6
Tresavean	424	1765 2 6
South Caradon	357	2492 19 0
West Wh. Jewel	228	780 9 0
Par Consols	200	956 1 0
Treleigh Consols	179	£914 16 0
Wh. Sisters	81	530 11 0
North Downs	68	408 6 0
Penstruthal	13	71 9 6
North Tolgus	8	15 15 0

Average Standard .... £105 17 0 | Average Produce 7½
Average Price per ton £4 16 0
Quantity of Ore .... 2689 tons. | Quantity of Fine Copper, 193 tons 3 cwts.
Amount of Money £13,054 16 6
LAST SALE.—Average Standard .... £91 6 0.—Average Produce 9½

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal	200½	£1211 4 9
English Copper	466	2360 17 0
Vivian and Sons	573	2598 13 0
Freeman and Co.	421	2020 9 0
Grenfell and Sons	58	260 16 0
Sims, Willyams, and Co.	355½	1686 0 3
Williams, Foster, and Co.	615	3005 16 6
Total tons	2689	£13,054 16 6

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcels.—North Roskear 900—Consolidated Mines 747—Tincroft 355—Fowey Consols 276—Wheal Seton 245—South Wheal Francis 151—South Roskear 130—Wheal Harriet 124—East Wh. Crofty 109—Lanivet Consols 90—Tretoil 52—Wh. Courtney 10.—Total, 3189.

Copper ores for sale on Thursday week, at Andrew's Hotel, Redruth.—Mines and Parcels.—Carn Brea 547—United Hills 320—Wheal Prosper 256—Par Consols 220—Creeg Braws 171—Levant 140—Alfred Consols 130—Wh. Rodney 76—West Wh. Treasury 65—Botallack 55—Trenow Consols 54—Carn Perran 30—Wh. Agar 24—North Wh. Basset 23—Wh. Brook 7.—Total, 2118 tons.

COPPER ORES.

Sampled Dec. 2, and Sold at Swansea December 23, 1846.

Owing to the non-arrival of the Swansea Ticketing Paper until late this morning, we can only give the Total Produce, which is as follows:—

Mines	Tons	Amount
Berehaven	408	£3065 12 0
Chili	329	5857 9 6
Burra Burra	281	4499 0 0
Cronebane	194	669 4 6
Tigrony	81	278 0 0
Ballymurtagh	89	£391 12 0
Holyford	18	370 16 0
Ivy Slag	12	30 6 0
Yattagolinga	2	27 4 0

Total tons, 1414.—Total amount, £15,198 4s. 0d.

NOTICES TO CORRESPONDENTS.

TITLE PAGE AND INDEX.—The four inside pages—7, 8, 9, and 10—must be detached from their present position, and then folded over—title page outwards—and placed at the commencement of the year's Numbers, for binding in a volume.

The MINING JOURNAL is published at about Eleven o'clock on Saturday morning, at the office, 26, Fleet-street, and can be obtained before Twelve of all the news agents, at the Royal Exchange and neighbourhood.

"Y. Z." (Kent-road).—If our correspondent will furnish us with any requisite alterations for our Share List, duly authenticated, every attention will be paid to his communication. There are many objections to the adoption of the course he suggests.

"G. A." (Paris).—We shall be glad to receive the communication referred to.

"To an Enquirer and Subscriber" (Liverpool)—who wishes to know if pig-iron is about to be admitted into France at a reduction of one-half the duty? We can only say, for the present, that the Minister of Commerce has the subject of reducing the import duties on British iron, cast-metal, machinery, coals, &c., under special consideration, to be presented next session to the Chamber. How far that reduction may be, we cannot at present venture to say; but, when decided, it will appear in our Journa.

"J. P. K." (Stockton-on-Tees.)—Refer to the advertisement of Mr. Weale's *Engineer's and Contractor's Pocket Book*, in this day's Journal, for the price, &c.; we do not know the address of Mr. York, the patentee of the hollow axle—but a letter would reach him, addressed to the care of Mr. Manby, the secretary of the Institution of Civil Engineers.

Erratum in Dr. Murray's paper on Mr. Crosse's Insect—*for* "La rere ne nait que de,"—*read*, "la vie;" *and* compliment should be compliment.

THE MINING JOURNAL
And Atmospheric Railway Gazette.

LONDON, DECEMBER 26, 1846.

On the return—or, perhaps, more properly speaking, we should say, the recurrence or anniversary—of the festive season, with which closes our volumes for the present year (now some 12 years old), it might be naturally expected, if we did not feel called upon to admit the value of the several communications of correspondents, which have added so much to the interest and importance attached to the MINING JOURNAL, that we should, at least, acknowledge the interest manifested, if we may judge from our increased circulation. In admitting the one and other, we trust we may be allowed to express a hope, that our endeavours to cater for, if not the amusement, at least the advantage, of our readers, will be acknowledged by "One and All;" and while we have endeavoured at all times to avoid personalities, it will, at least, be admitted, we have ever been careful that no individual wrong should be committed, or the body at large sacrificed to the act or interest of the individual. With our present Number will be found an index, which, comprehensive as it may be, can, however, only give a faint idea of the information conveyed weekly through our columns. The reports from the several mining districts, whether at home or abroad—the periodical meetings of adventurers and shareholders, whether in Devon, Cornwall, Chili, Mexico, Brazil, or Australia—the weekly sales of British and foreign ores, in Cornwall and at Swansea—the imports and exports of metals—the communications of our correspondents on all matters of science generally appertaining to mining, metallurgy, geology, mechanics, &c.—the elaborate papers on the various improvements in the railway system—the original papers which have appeared, and the illustrations with which they have been accompanied—the weekly reports of the metal trade, with the letters from our Paris correspondent and others—together form so much statistical data, that we need hardly say such cannot be acquired by the selection of information rendered by any other portion of the press.

It has ever been the object to make the MINING JOURNAL the medium, whereby information might be acquired, whether theoretical or practical; while we need hardly say, that the latter has at all times taken precedence, which, being understood, can be duly appreciated. In closing the present volume, we have only to express our obligations to friends for the courtesy which they have observed, and the kindness we have at all times received; while we indulge in the hope, that the efforts we have heretofore made, will be deemed an earnest, if such were necessary, of our good "intentions" henceforth. With the encouragement and support received, it would, indeed, be ungrateful did we not use our best exertions; and with such promise, and the kind and hearty wishes of a merry Christmas and a happy new year, we bid our readers farewell for a while.

The *Moniteur*, of the 17th inst., again attempts to refute the remarks we have made, at various times, respecting the monopoly of the iron and forgemasters of France, and their inadequacy to furnish the rapid demands making by the numerous companies for rails, locomotives, and other *materiel*, which not only causes a great delay in the completion of the lines, but also a most onerous expense. Our Paris correspondent, in several letters, gave a detailed account of the *exposé* made on this subject by M. FAUCHER, the talented Deputy for Reims, who is also a railway director, and, consequently, had more efficient opportunities to investigate this monopoly, and the extortionate prices exacted by the ironmasters from the various companies, than parties who have not embarked in these great speculations; and he fearlessly published this nefarious system in the *Siècle*, *La Patrie*, *Debats*, *Epoque*, the *Chemins de Fer*, and other anti-protectionist journals. This publicity of the tricks and machinations of the party, of which our esteemed contemporary is the champion, naturally set forth to the world facts that had been attempted by every means to keep as secret as possible, and which completely confounded them—knowing, as they do, that they are *guilty*, and the charges unconfutable; but the *Moniteur* loses all temper and argument, and makes a sweeping denial of the statement of M. FAUCHER, but has not the candour to openly combat it, and screens itself by puerile subterfuges. We refer our susceptible protectionist to the spirited letter of M. J. MILLERET, a former Deputy, which appears in the *Journal des Chemins de Fer*, of the 19th inst., of which we give an extract of the advice he gives the Government, and a few of his remarks:—"1. To allow railway companies the facility of importing, free of duty, one-half the rails and locomotives they require from England, or other countries.—2. To reduce the import duties on iron, and to permit the free importation of cast metal and coal as primitive, indispensable matter to every branch of industry." As early as 1838, when railways were first becoming established in France, he then advocated the proposition of allowing one-half of the rails and locomotives required, founded on the fact, that his own forges were not able to make a sufficient quantity of rails, so as to meet the demand, and the price would be too high, particularly as the law of 1822 had enhanced the import duties on foreign iron: the forgemasters not being prepared for so rapid a railway progress, were not enabled to produce near a sufficient supply, notwithstanding the monopoly conceded to them. Rails, moulded iron, and cast-metal tubes, have become scarce—the price increasing annually; and they even now refuse to enter into new contracts, or perform those they have signed—a proof of which is, that the opening of the Paris and St. Germain Atmospheric Railway is retarded for one year, because the factory of Creuzot cannot supply, at the agreed periods, the tubes which had been contracted for. The Trans-Atlantic Packet Companies, whose steamers were to have been built at Havre and Bordeaux, had the works suddenly stopped, because the forges of Montataire, Hayange, and Imphy could not supply the sheet-iron and rivets requisite, even at exorbitant prices; and the Northern Railway Company, not receiving from the forgemasters and builders the material it had ordered, has been reduced to the absolute necessity of converting its passengers' carriages into luggage trains. In 1821, the price of wood throughout France considerably increased; and British iron, having fallen to 7*l.* and 8*l.* per ton, the forgemasters, who nearly all worked by charcoal, could no longer contend with the introduction of foreign iron, made by coal; in consequence of which, they demanded that an extra duty of 8*s.* 4*d.* per cwt. should be imposed upon its importation, and the duty on cast metal quintupled; but this to be only exacted for 12 years, and after that period to be gradually decreased, according to the rates of home manufactured iron. This petition was referred by Government for the consideration of the General Council of Manufactories; and, as an encouragement to the ironmasters, they consented that its importation should be increased for a limited time; but that their request for the increasing of the import duty for cast metal from 1*s.* 8*d.* to 8*s.* 4*d.* the metrical cwt., was beyond all reason—and the commission, considering that the new duty should only be in operation for five years, agreed that the import on cast metal, should be augmented to 2*s.* 11*d.* per 100 kilogrammes, or 2 cwts., if coming by land, and the old duty of 1*s.* 8*d.* should be continued on that imported by sea; and that the duty on iron should be raised from 12*s.* 6*d.* to 16*s.* 8*d.* the 2 cwts., either by land or sea, except from Russia and Sweden. This has been now exacted upwards of 24 years, and the forgemasters and forest proprietors are realising annually a profit of 1,200,000*l.*, by a monopoly imposed upon every branch of industry. The duty on foreign bar-iron in 1791 was only 3*s.* 4*d.* per cwt., and cast metal was admitted free; but, previous to the law of 1822, it was 1*s.* 8*d.* per cwt., when it was increased to 7*s.* 6*d.*, and reduced by the law of 1836 to 5*s.* 10*d.* It is stated that the forgemasters can claim 40 votes in the Chamber of Deputies; but many of them have been so candid and unprejudiced, as to acknowledge that it would be only an act of justice on the part of Government to allow the introduction of one-half the foreign rails free of duty.

With respect to the coal question—France has not been, like England and Belgium, gifted by Nature with rich, abundant coal mines; and, with the exception of the basins of Anzin, St. Etienne, Firmi, and Alais, the collieries of Burgundy, the Upper Loire, and the Allier, only yield a very inferior quality of carbonaceous fuel. From Dunkirk to Bayonne—an extent of 300 leagues of coast—there are but two coal basins, Anzin and Firmi, both of which are at some distance from the sea, and fire-damp prevails in the major part of the coal pits, causing great ravages. Thus, by imposing a heavy import duty on foreign coal, it is increasing the expences of railway locomotives, steam navigation, foundries, forges, salt factories, and every description of industry employing this fuel, and that on an article so requisite, which France cannot produce sufficiently herself, and, consequently, no monopoly should be allowed to exist. On the eastern frontiers, from Maubeuge to Mulhausen, there is not one colliery; and the numerous factories in this department, which only consume coal, are obliged to have it from the basin of Saarbruck. By the official investigations made by the Government mining engineers, as to the probable duration of the different coal mines, the basin of Mons is not expected to yield after another century, according to their calculation of the quantity annually extracted; as the fire-damp is so general, many pits will become extinct long before half, or even a quarter, of that period. The shares in the Anzin Coal Company, within the last 35 to 40 years, have increased from 600*l.* to 7000*l.*; and they will no doubt strongly oppose the reduction in the importation of English and foreign coal; but the monopoly of a few wealthy and selfish companies must succumb to the public weal. The above remarks, given by an extensive iron and forge proprietor like M. MILLERET, who, it is to be presumed, has the interest of the mining industry of France at heart, and not actuated by any particular sympathy for British, or any other foreign prosperity, if iron, machinery, coal, &c., could be procured equally as good and as cheap in his own country, must prove to the *Moniteur* that all its arguments in favour of the mineral richness of France, and the resources of its "honest" monopolising iron and forgemasters and coal mine proprietors are fallacious, and only actuated by prejudice and anti-English feeling, seeing that the Minister of Commerce has resolved to present to the Chambers, at the commencement of the ensuing session, a project of law respecting the Custom duties; and one among other *réformes radicales*, in the present tariff, is the reduction on the import duties on British coal, steel, and cast-iron, which our pugnacious contemporary views with dread, as the overthrow of the exactions and impositions of its party. Notwithstanding the sallies it pleases to make to the contrary, we still maintain that the reduction on British iron, machinery, and coal, will be a general advantage to the consumers at large; and although it accuses, with a virulent and spleenish feeling, the Ministers of ingratitude, and even treachery, towards the national industry, in favour of English aggrandisement, to the ruination of their own iron and coal interest, the asperity of our valiant antagonist does not trouble our conscience, as it prognosticates, and is only a proof, that our remarks, and those of our Paris correspondent, are too true; and it foresees the ultimate triumph of justice over an extortionate protectionist or monopolising system, which has for years degraded France, to the detriment of her commercial intercourse with other nations. With respect to the letter, which appears in its number of the 20th inst., from M. de PREZ, one of the directors of the high furnaces and forges of the Jahottiere, who appears aggrieved that the company should have been denominated as an English speculation, in our columns, we must agree with our contemporary, the *Moniteur*, that, although the company's works are in France, it is *bonâ fide* an English undertaking—the money to constitute it having been raised in this country—as not a franc has either been invested from the Paris Bourse, or manufactories of Nantes, and nearly the whole concern, management and workmen, Englishmen. Be it whatever M. de PREZ pleases to designate it, we daresay he will not hesitate to receive his portion of the profits. Such squeamishness, or what he may pride nationality, is really too ridiculous to notice.

GAS LIGHTS.—We have now the pleasure of placing before our readers the second lecture of Mr. T. A. Hedley, as delivered at the Mechanics' Institution, Devonport. We are, however, obliged to divide it into two parts—the one we insert in our present Journal, and the other we will give early place to in another Number; as, from its interest, we cannot feel justified in condensation, which must necessitate the withholding from our readers many important facts with which the paper abounds.

THE EARTHQUAKE IN SCOTLAND.—Our excellent correspondent, Dr. Murray, has favoured us with a letter he has received from his friend, P. M'Farlane, Esq., dated Comrie, Perthshire, the 17th inst., from which we extract some particulars, descriptive of the late earthquake in that region:—"It was, indeed, a severe shock you refer to in your favour of the 12th—at least, relatively so, as compared with those usually felt here, though happily trifling, in comparison with those awfully devastating convulsions that are occasionally experienced abroad. Some chimney stacks were shattered about two miles to the west of this, in a new house built at the foot of the hill, from under which these shocks are generally supposed to proceed; slates were shaken off houses in the village, and at Lamers, two miles to the east; some house bells were rung in Creiff, six or seven miles east of Comrie. The people, of course, were a good deal alarmed, and the more so owing to the time it happened—the dead hour of night. Many here think it was as violent as any felt in 1839; but, judging from my own feelings, and its (the shock's) effects on buildings, &c., there is reason to think this opinion is partly owing to the *freshness* of the impression. We fixed upon a scale for indicating the intensity of shocks, and made the most severe in 1839 a standard one, calling at 10; the last I have entered in the list as 8. The indications of the seismometers, &c., you will find in the *Athenæum* of the 5th. * * * I almost forgot to mention to you, as connected with the severe earthquake of the 25th ult., that there was a *running fire* of smaller shocks succeeding that great leader up to six in the morning; some folks counted as many as 30, of various degrees of intensity, three of them entered in the list as 3, and the rest as 1 and 2. Some intelligent people, who kept counting them, remarked that the intensity of the individual of this train of smaller shocks was just in proportion to the interval of time that elapsed since the last, as if those that had been pent up longest were the hardest when they got vent. There have been none since the 25th."—On the envelope, Mr. Macfarlane says:—"I open this again, to say that last night (17th), at a quarter to 12, we had another shock—great sound, little or no shake."

PROGRESS OF FRENCH MINING INDUSTRY.

[FROM OUR PARIS CORRESPONDENT.]

The Minister of Public Works has nominated a commission, to examine into the questions raised by the union of the coal mine companies of the Loire under one management. The commission will propose such measures as it may think advisable. The Minister of Public Works, the Minister of Commerce, Comte d'Argout, M. Dupin, M. Teste, and several other eminent individuals, are nominated on the commission. Many people say that the Minister has taken this step only to burk inquiry by the Chamber of Deputies, he being personally favourable to the amalgamation of the Loire coal companies.

By the French law, any person named in a newspaper has the right to reply in the columns of the journal. In consequence of this law, the *Siècle* has been condemned to insert a letter from M. Mertian, of Montataire, because his name appeared in one of the articles of M. Faucher, on the iron monopoly. The *Siècle* has, moreover, been condemned to pay a fine of 500 fr., for having refused the insertion of the letter. Against these condemnations the journal has appealed, and the appeal is now waiting for hearing. The French law, giving the right of reply to people named in newspapers, is very stupid, and the case of the *Siècle* shows that it is monstrously unjust. In his articles on the iron monopoly, in that journal, M. Faucher made no mention whatever of M. Mertian, or his establishment of Montataire; but M. Mertian constituted himself the champion of his order, and wrote a long-winded letter to the *Siècle*. As a favour to him, part of this letter was inserted, accompanied by a few comments from M. Faucher, in which the name of M. Mertain necessarily appeared. Thereupon, M. Mertain indited another long-winded epistle to the *Siècle*, and it is for not inserting this epistle that the unfortunate newspaper is condemned! Could anything be more absurd and iniquitous? But, after all, it is hardly to be regretted that M. Mertian has prosecuted the *Siècle*—for the prosecution for such a cause proves that the ironmasters are becoming frantic, and, therefore, approaching the destruction of their scandalous monopoly. The gods always render wild those they are about to annihilate. The ironmasters must be wild as March hares, or they would never dream of trying to condemn the wretched public to read their ponderous literary essays. Their monopoly on iron is odious enough, but their monopoly and their literature together make a burden too heavy for human flesh and blood to bear.

The Northern Railway Company has brought an action against the directors of the iron establishment of Fourchambault, for the recovery of 120,000 fr. (4800*l.*), for their breach of agreement in the non-delivery of rails. The same railway company has also brought another action for 714,000 fr. (28,560*l.*) against Messrs. Schneider and Co., for a similar cause. These cases are inscribed on the lists of the Tribunal of Commerce, and will, probably, be disposed of before long. It is to be hoped, that the ironmasters will be condemned to heavy damages; for not only have their delays inflicted serious injury on the Northern Railway Company, but they stand in need of a lesson, to teach them that people are not altogether at their mercy, to be fleeced and injured as they please.

Your readers may recollect that, in answer to the assertions of M. Faucher, the ironmasters stated that the atmospheric branch of the St. Germains Railway is not delayed on account of the want of tubes. I was at St. Germains last week, and took an opportunity of examining the works on this embranchment. I found that the tubes on about two-thirds of the line are laid down, or are on the ground ready to be fixed; but, most certainly, there were not tubes sufficient to complete the whole line. Had the ironmasters fulfilled their engagements, the railway might have been opened six or nine months ago.

Messrs. Schneider, du Creuzot, have sent paragraphs to the newspapers, stating that they have lately constructed engines for steam-vessels on the Rhone, which are superior to those made by English establishments for the vessels on that river. The vessels, fitted with their engines, are described as going quicker, and as carrying heavier loads than those with English engines.

A company is now forming in this city, with a capital of 128,000 Austrian florins, for working the mines of Oborson, in Hungary. A gentleman of Hungary, of my acquaintance, tells me, that, perhaps, no country on the continent presents so magnificent a field for mining enterprise as Hungary. It possesses mines of gold, silver, copper, lead, iron, coal, not one-twentieth part of which has ever been touched, or is at all likely to be for a long time to come. The mines worked by the Austrian Government are very few in number, and are chiefly gold and silver. My friend expresses unbounded surprise that the mineral wealth of his native land should be totally unknown to English capitalists. If they knew of its existence, he thinks they would explore it in preference to that of other countries, even of Mexico. The nobles of Hungary, who possess the mines, have no idea of their value; and, if they had, would not know how to turn them to account. They could, consequently, be got cheap; and as they could be worked easily and cheaply, and their products disposed of with certainty and dispatch, it is a pity that they should be neglected by Englishmen. Our countrymen carry their money and their enterprise to all parts of the world, and why not to Hungary, a virgin land for speculation?

The newspapers say that a project has been submitted to the Belgian Government for the establishment of a railway from the Charbonnages du Centre to the railway at Entre Sambre et Meuse. This line would facilitate the introduction into France of the coals of the *Bassin du Centre*, which are famous for their excellent qualities.

The Sardinian Government will, on the 14th of January next, receive offers for the supply of rails and chairs on more favourable conditions than it was at first disposed to accept.

A St. Dizier letter, of the 17th, says—"The prices of iron have undergone no variation since our last quotations; transactions take place without difficulty. The frost has not been sufficiently severe to trouble the works of the furnaces; but the snow has caused all conveyances to be interrupted, as well as the labour in the forests."—*Paris, Wednesday.*

SCOTTISH MALLEABLE IRON COMPANIES.—We have just learned that a new company, on a large scale, is about to be formed on a joint stock principle, and that Saltcoats, or its neighbourhood, is to be its site. From what we have heard, the project is likely to take well. We observe that the directors of the East of Scotland Company have lately been elected. The projectors seem sanguine that their choice of directors, with Mr. Alison, of Blaircastle, as chairman, will ensure its prosperity. The stock is well held, and expected ere long to be at a high premium. The West ot Scotland Company's shares are presently in demand, and selling at 14*l.* premium. From the above reports, it is clear to us that malleable iron companies, if properly conducted, will be amongst the best paying concerns of this country. Why should we send so many of our *pigs* to England when we could so economically and conveniently use them at home? *Glasgow National Advertiser.*

EGLINTON IRON-WORKS, AYRSHIRE.—One of the three new furnaces, recently constructed here, was put into full blast on Friday last—George Johnstone, Esq., Redburn, presiding at its celebration. The others will soon follow. The building of a fourth furnace has already been commenced, and others are said to be contemplated.

NEW LOCOMOTIVE.—Mr. Galloway, it is stated, is now trying an experiment on the Great Western Railway, at Maidenhead, up an incline of 1 in 19, from the road below to the station above, with a new species of locomotive. The principle is to do away with the driving wheels altogether, and to connect two horizontal wheels, instead of the driving wheels, with the pistons. These wheels run before, and press the opposite sides of a rail between the other rails by means of leverage gear; and, from their bite on that rail, they produce the traction of the train in lieu of the driving wheels. It is said, that an engine of this kind has drawn 30 tons readily up the incline mentioned.

NEW LOCOMCTIVE.—On Monday one of the largest locomotives ever constructed for the narrow gauge, was taken from the foundry of Messrs. Bury, Curtis, and Kennedy, to the railway station in Crown-street. It was drawn by 17 horses, and seemed to attract much attention. The engine has six wheels, coupled, the diameter being about 5 ft. We learn that several locomotives are in course of construction at this factory, which will have wheels of 6 ft. diameter, and a larger stroke of piston than usual, by which the speed will be much increased.—*Gore's Liverpool Advertiser.*

CONTRACTS FOR RAILS.—Mr. Levick, of the eminent house of Crutwell, Allies, and Co., of South Wales, attended in Dublin last week, and concluded contracts with the Great Southern and Western, the Dublin and Belfast Junction, and the Dundalk and Enniskillen Companies, for the delivery in all of 15,000 tons of rails.—*Irish Railway Gazette.*

WYLD'S RAILWAY MAP.—Mr. Wyld has just published a map of all the lines constructed and constructing in Great Britain, compiled from plans deposited according to the Standing Orders. In addition to its merit as a correct atlas of the world of railway, it recommends itself by its portability as a convenient pocket companion, and the low rate (2*s.*) at which it is published, being intended for general circulation.

THE ELECTRIC TELEGRAPH.—The telegraph from the South-Western Railway has been laid down as far as Waterloo-bridge; and upon reaching that point, its course was changed from the western to the eastern side of the bridge, crossing the Waterloo-road, close to the gates of the bridge on that side.

LONDON AND YORK.—Mr. Peto has just taken the contract for the portion of this line from Peterborough (where Mr. Brassey's contract ends) to York. The terms of Mr. Brassey's contract are, that he shall complete, by the 1st of June, 1849, the line between London and Huntingdon, and the remaining portion, to Peterborough, by the November following.

PREVENTION OF MINING ACCIDENTS.—We are informed, on the best authority, that Government have appointed an experienced engineer, thoroughly versed in the system of mining peculiar to South Staffordshire, who will immediately visit this district, with a view to the adoption of means for preventing the lamentable loss of life which annually takes place in working the iron and coal mines in our neighbourhood.—*Birmingham Journal.*

Last week, a collier, at Blackburn, named H. Fort, on going to the bottom of the Altham Colliery to work, was suddenly attacked by a rat, which flew at his arm, and held so fast with its teeth, that it would not leave the arm until it was strangled.

IRON TRADE OF SCOTLAND.

[FROM OUR CORRESPONDENT.]

I observed an article, in a late Number of the *Mining Journal*, from a correspondent, giving a statement of the Pig-Iron Trade—part of which is entirely erroneous—therefore, calculated to mislead your readers very much, indeed. He furnishes a list of the various iron works, omitting no fewer than SEVEN of them—viz.: Coltness, Castlehill, Carron, Kinniel, Devon, Forth, and Bunaw—and states the number in blast at 78; whereas there are actually 100 in blast at present, producing, not 100 tons (as he states), but, more correctly, 110 tons each per week—making the total weekly production 11,000 tons, in place of 7800 tons. It is extremely difficult to ascertain, with any thing like certainty, the actual consumption of pig-iron; but, assuming your correspondent's statement to be correct—viz., 10,000 tons weekly (although, I think, 8000 tons would be nearer the truth), then, it follows that the production exceeds the consumption by 1000 tons weekly—to say nothing of the large stock on hand in Scotland, which is variously estimated from 150,000 to 200,000 tons, besides the stocks held in Liverpool, Runcorn, Bristol, and other parts of England.

MALLEABLE IRON-WORKS IN SCOTLAND—DEC., 1846.

	Counties.		Weekly Production.
Monkland & Gartness	Lanarkshire	about	Tons 400
Dundyvan	ditto	about	350
Govan	ditto	about	350
Mossend	ditto	about	40
Muirkirk	Ayrshire	about	60
		Total	Tons 1200

The following new malleable iron-works will be ready to start in the course of spring, 1847, and will, for some time at first, produce the weekly quantity named; but will, very likely, increase their production afterwards:

Monkland	Lanarkshire	additional	Tons 100
Townhead of Glasgow*	ditto	ditto	100
Motherwell*	ditto	ditto	250
		Probable weekly production	Tons 450

Additional malleable iron-works are about to be erected at Dunfermline, Fifeshire, and at Kilwinning, or Saltcoats, Ayrshire, by large influential joint-stock companies, with every prospect of success.

The present production of pig-iron in Scotland (as already stated) is about 11,000 tons per week, of which—from the mere want of the necessary works—only about 1800 tons (being one-sixth part) are manufactured there; while, in England, the proportion of manufactured iron is estimated at not less than three-fourths. It cannot be doubted, that the malleable iron trade will continue to be a peculiarly profitable one, as there are not only the numerous railways in this country, but also railways all over the world, to be supplied with rails—besides, an increased consumption of other descriptions of malleable iron may be relied on, both for the home market and exportation.—*Dec.*, 1846.

* These two are entirely new works, and the latter is a joint-stock company, called the West of Scotland Malleable Iron Company.

The New Year.

Another cycle of the Earth's course is passed,
And another year is added unto Time—
To swell the number, which ages have amassed,
Since worlds first shone with radiant light sublime!
When young Creation smiled on all around,
And joyous Nature, 'merging out of night,
Obey'd the mandate of that Power profound,
Which had but thus to will—"Let there be light!"
And on the instant, from the glorious Sun,
A streaming flood of bright effulgence sped,
And countless stars commenced their course to run,
With ready tribute to the beams he shed.
Obedient to this vivifying power,
O'er hill and dale a verdant mantle spread—
Gorgeous with the bright hues of many a flower,
That, mingling with the verdure, reared its head,
When Man, created in the 'semblance of his God,
Stepped proudly forth, as on the teeming ground
He, in the enjoyment of young existence, trod;
Still unfamiliar with the life he'd found—
As yet of sin unconscious—he freely breathed.
No guilty fears his pristine spirit cowed,
But for his altar the fragrant chaplet wreathed,
And to his God in humble meekness bowed.
Alas! how changed the scene since Sin prevailed,
And held dominion o'er the human race.
Increased in knowledge, but how greatly failed
In each attribute that 'ere does virtue grace—
He now in toil drags on his weary way,
Refusing still God's mandates to respect;
Postponing ever, and from day to day,
Defers to make the needful retrospect.
Will he never learn to know, the coming year—
Nay, even the present fleeting hour—may be
The last that can be accorded to him here,
To prepare his soul for immortality.
Short-sighted fool! I now entreat you pause—
Oh! consider well the hours as they pass,
And hope not exemption from Nature's laws,
For man must fade, and wither like the grass:
Seize, then, the precious moments as they fly—
Arrange your household while it yet is day,
For night may come, when, not expected nigh,
Unprepared, your soul may pass away.
Let the new year to new resolves give rise—
Lift your spirit in fervent prayer to heaven;
Not one in vain on Christ's support relies—
Trust in his blood—you are sure to be forgiven. G.

THE LARGEST AND MOST POWERFUL ENGINE EVER BUILT.—It is some 20 years since we heard of the first locomotive with six wheels, which fully developed the advantages to be gained by that number, they being all connected. It was made for the spirited directors of the Stockton and Darlington Railway Company, and worked on that line, until it was found necessary to supply its place with engines of a heavier kind, but of similar construction, which, by the way, was a great step in the advancement of locomotion. We had not heard of any additional wheels being added, except in the American bogie engine, until, in the present year, we were apprised of another step taken by an engineer in South Wales—he having constructed a locomotive with *eight* wheels, all connected. We have seen this engine at work (and really it is a monster, both in appearance and power), climbing up inclines very unfavourable, with loads that entirely baffle engines of any other construction. The designer of this *monster* is Mr. W. Stubbs, superintendent of locomotives on the Llanelly and Landilo Railway, and one of the patentees of "Stubbs and Grylls's patent swift engines;" several of which are, as we have previously announced, now in course of construction at Messrs. Grylls and Co.'s South Wales Iron Works, Llanelly, some description of which we will give in an early Number.

KINGDOM OF MOSQUITIA.—We have received several official documents, referring to the peaceful and satisfactory arrangements now in progress for the establishment of this kingdom, which is of much importance to a large class of the speculative public. We learn, from the minutes of the Council of State, that, at a numerous assemblage of authorities, the King, in an exceedingly well-conceived speech, had directed the appointment of a Council of State, to frame necessary laws, &c. On a subsequent day, the State Councillors, named in the Royal Commission, met in their chamber; and, after taking the usual oaths, proceeded to draw up bills relative to land, municipal, and militia regulations, &c. These preparatory measures completed, no bar will exist to the peaceful conduct of the country, and the effective development of her natural resources.

Original Correspondence.

HOT AND COLD-BLAST IRON.

SIR,—I beg to inform you, and those who may be interested in this subject, that the article which appeared in your excellent Journal of the 21st of November, from a Newcastle correspondent, purporting to be the result of experiments made by Mr. R. Stephenson, the eminent engineer, on the relative strength of hot and cold-blast iron, is entirely fallacious and unauthorised. As it is evident your correspondent has reference to the experiments which are now being made under my superintendence, by direction of Mr. Stephenson, at these works, it may be proper to state, that they were adopted with a view to the selection of the most suitable iron, to be used in the construction of the High Level Bridge. These experiments are as yet by no means completed; indeed, the number hitherto made does not amount to that stated by your correspondent; but, so far as they have gone, no one at present except myself is in possession of them, so as to be enabled to draw a just estimate from the average results. It must, therefore, be clear that, from whatever source your correspondent has obtained his information, it was not only premature, but incorrect. Your insertion of this in your next Journal will assist to correct any erroneous impressions that may have been formed by your readers, relative to these experiments, and, at the same, oblige, yours, &c.,—JOHN HOSKING: *Gateshead Iron-Works, Gateshead, Dec.* 15.

IMPROVEMENTS IN COAL MINING.

SIR,—Your correspondent "Carbonarius," in last Saturday's Journal, proposes a most important question indeed, and one that will, doubtless, at no distant period, come into operation. It is quite possible to contrive and put together a piece of machinery that would not only be capable of "holing" out the coal on the pavement, but, by another adaptation, would also accomplish the shearing as well. The cost of such machine, with slide and screws, might be about 25*l.*, and would be equally advantageous in working high coal as the thinner seams. The advantages arising from such a system can scarcely be enumerated; the colliers, *poor fellows*, would be completely relieved from the cramped and awkward, not to speak of the dangerous, position, they are uniformly obliged to put themselves into in the operation of "holing." Your correspondent does not overrate, *even at* 20 *per cent.*, the loss sustained by both master and workman in working coal by the present mode, especially where powder is much used, which, of itself, if not skilfully applied, causes great waste of good coal, besides being hurtful to the air in the pit, and dangerous—nay, fatal, in too many instances—to the collier. Let the colliers, or their masters, or both, offer premiums for the simplest and most effective machine constructed, to aid and assist in the mining of coal—having a regard to the safety of the workman, and a saving in the material itself; and it will not be long until such machine shall be forthcoming. *Query:* Should not the British Association lend a hand in forwarding this most important desideratum?—The subject is one affecting the gains of thousands, and the welfare of tens of thousands.—INVENTOR: *London, Dec.* 23.

IMPROVEMENTS IN WORKING COLLIERIES.

SIR,—I read, from time to time, in the *Mining Journal*, your sensible editorial remarks in respect to that most destructive gas, the carburetted hydrogen of coal mines. Would that Government might be stirred up to a sense of *their* duty in the cause of humanity! Almost every number of your Journal conveys the melancholy intelligence of destructive explosions in our coal mines. In the last Number I find, that in your report of the inquest which was held upon the bodies of three men, who were killed by an explosion of fire-damp in the Trubshaw Colliery, in evidence, James Hamlet stated, that "he had examined the pit with Mr. Coe, the manager, and found a safety lamp, which he knew to have been used by Bailey (one of the deceased) on the morning of the accident; it lay near the clothes which he had taken off. The screw was off the top of the lamp, and a whole candle lay near to it. The top of the cotton wick was singed, as if he had been attempting to light the candle. I believe, that his having taken off the screw of the lamp, for the purpose of lighting his candle, was the sole cause of the accident." From this, we must conclude that poor Bailey, being desirous of obtaining a *better light* than that afforded by the *Davy*, thus exposed himself and others, and was, in consequence (if I may so speak), blown into eternity, at the moment in which *he* attempted to effect that desideratum—viz., more light, in order that he might be enabled to carry on his work to his satisfaction. Therefore, if a *better* and more *safe light* than that given out by the *Davy lamp* may be obtained, why not *call it* into general use? We observe that one of your scientific contributors, Dr. Murray, of Hull, recommends, in your last Number, that the "Davy lamp," being in its usual form *unsafe*, should be protected from the contingencies of currents and counter currents of air, lateral "blowers," and the deflection of the wick flame, when the lamp is in motion, by a *concentric shield of Muscovy glass.*" We are all aware that, as the pitiful light afforded by the "Davy" to the coal-hewers, in our several coal mines, the addition of what is commonly called "Muscovy glass," talc, or mica, would make *bad worse*, in respect to light. It is well known to the present writer, that a concentric shield of "Muscovy glass," such as Dr. Murray recommends, was long since tried, in at least one northern coal mine; and it was found that, from the obstruction caused by this mica shield, the Davy was rendered *useless*, from the extreme feeble light it afforded the poor miner. Perhaps, Dr. Murray may, nevertheless, be inclined to descend into a coal mine, and judge for himself, in respect to the value of the "mica shield" of protection, concerning which he has more than once lately given *his* public opinion; and he will find, that if there be no better light at hand, he will have some difficulty in extricating himself from the mine. I must, however, conclude, lest you may think me prolix. I will reserve other observations to a future period, should you, Sir, be inclined to afford me space in your valuable columns. The subject is of great interest to me on the score of humanity, having visited all parts of the *deepest coal mines in the world.*—T. R. TORBOCK. *Kirkby Stephen, Westmoreland, Dec.* 21.

CHURCH'S PATENT COKE.

SIR,—On reading the article on Church's patent coke in your Journal, of the 28th ult., I confess I was somewhat astonished, especially on reading the claims of the patentee. Now, Sir, Mr. Church must be aware, at least many of your readers are, that what he claims as his invention is nearly as old as the manufacture of coke itself. Within three miles of where I now write, I can show Mr. Church, perhaps, 20 or more coke ovens, having air flues, and other appliances, essentially similar to the one he has patented, which have been built, and in full operation, for, perhaps, the last 10 or 12 years. Cooling the coke in the ovens, by the admission of air through the flues, was, I believe, given up in this district, on account of the length of time it required for the process, especially when found that cooling it with water did not materially injure the coke. So far as regards the construction of the oven; with the air flues, and the process of cooling the coke, I think Mr. C. has no claim whatever; but "the application of electricity, for the purpose of freeing the coke from sulphur, &c.," is, I believe, something new. In regard to the time required to complete the process of coking 8 tons of coal, it has been found, by experience, that the best coke is produced by the best coking-coal of this district, when burned from 96 to 120 hours—indeed, when burned *less* than 96 hours, it is found to be of inferior quality.—W. STOREY: *Bensham, Gateshead-on-Tyne, Dec.* 23.

THE POTATO DISEASE.

SIR,—Any means that will lead to the slightest trace of the cause of the potato disease, or its remedy, is of the utmost consequence; the suggestion of your correspondent, Mr. Phillips, upon the probability of the presence of certain gases warding off the disease, is, therefore, well worthy consideration. I think there are other gases, besides nitrous and chlorine, which may have a remedial effect upon the disease—such, for instance, as sulphurous and muriatic acid gas. Now, as many of your readers live in the neighbourhood, indeed, at every relative distance from smelting-works and soda manufactories, where both these gases are given off in profusion, a very few inquiries made at different localities and distances from such works about the state of the potato crop, would give a kind of clue to the suggestion of Mr. Phillips, so far as regards these gases. From limited inquiry during a short stay in this locality (Swansea), I learned of two places, at a short distance, where the sulphurous fumes from the smelting-works are very dilute, being untouched by the disease, the vegetable being left in the ground the usual time, and dug up free of blemish. Whether the absence of the disease is connected with the presence of the gas, I do not know; but your correspondent's hints suggested to me the inquiries, and I have thought it worth while sending the results, suggesting that others who have the opportunity may make the same inquiries—the subject being, not only of great interest, but of the utmost benefit to the country, if it give any trace to the cause of the present affliction.

Swansea, Dec. 15. A SOJOURNER.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—As this is holyday time, and the feasting of Christmas does not facilitate the carrying out of scientific inquiries, I will, by your leave, substitute the following, instead of my promised letter on Shipbuilding—perhaps the "grave and reverend seignors," who read your Journal, will not object to a little lighter matter at this jovial season. Some years ago I was on board of a vessel, which was at anchor under Cross Island, in the White Sea; and, anchored near us, were a number of Lapland fishing vessels—the crews of which sang, in chorus, a fine spirited air, with which I was so much pleased, that I got the captain of one of the little vessels—who could talk English—to repeat to me the substance of it. I wrote the ideas down at the time—as near to the original as I could—and, long after, arranged them in the form in which I now send them. I have little doubt the song I heard was a relic of the "Old Norse Sea-Kings," the ancestors of the present inhabitants of that district. Should you not think it derogatory to the columns of the *Mining Journal*, you will, perhaps, give it a place there.—NAUTICUS: *London, Dec.* 25.

Song of the Sea-King.

Do you think that I mind, as I bound o'er the sea,
The fierce swell of the wave, as it breaks on the lee—
Nor do I heed, as we rush on before,
The wild ocean's rage, or the tempest's roar!
Oh! give me the bark that can swiftly glide,
And light on the foam of the ocean ride:
Tho' the wild waves strive to o'erleap the sky,
On the wings of the storm can safely fly!
As on the crest of the billow she rides,
Spurns the dark wave from her glittering sides:
'Tis then that I feel, as I pace o'er the deck,
In vain strive the storm or the tempest to wreck
My tight little bark, that so gallantly braves
The rush of the wind, and the strife of the waves! NAUTICUS.

THE PREADAMITIC HYPOTHESIS.

SIR,—The assumption of a central nucleus of incandescent matter, in reference to our globe, appears to me as gratuitous as Sir John Leslie's idea of a central orb of light. Mathematical deductions from the vibrations of the pendulum, and the intensity of magnetic force, seem entirely equivocal, as well as indications derived from the temperature of mines, and the waters of Artesian wells. In our explorations we have only penetrated a mere film—scarcely the simple shell or rind. The seat and source of volcanic fires may be rooted many miles in depth; but the earth's radius is 4000 miles. Besides, the intervention of a non-conducting material, of the flimsiest depth, would entirely insulate the highest temperature. Flame may float on water, and that water form a coverlet of ice, and the ice remain unmelted. Earthquakes are, no doubt, connected with subterranean heat, and its electricity; but, if associated with a central fire, the earthquake would convulse not a country, but the globe—not a continent, but a world—nay, shatter it to fragments.

Though I am disposed to call in question many of the lucubrations of geologists, which I conceive to be altogether unwarranted by facts, and esteem them, what I may appropriately call, geocentric aberrations, I am far from undervaluing the science: I do not, indeed, think it is sufficiently matured to take its place among the *inductive sciences;* but I know not a branch of knowledge of more curious import, or more sublime and beautiful in its developments. I glory in its revelations, and esteem the science for its own sake; but I am not accustomed to think by proxy, or allow the mind to be blinded by the authority of a name, however eminent.

The crystalline and *azoic* rocks, where no traces of organisms can be found, clearly reveal a period in the history of past time, when the earth was unarrayed by the glory and the grandeur of organised existences—thus the *eternity* of their being, the atheist's dogma, is for ever annihilated; while the palaozoic rocks discover normal types of every form, inclusive of vertebrata, and not merely monadal organisms. Geology, moreover, makes us acquainted with new and remarkable forms—sublime manifestations in all the evidence of demonstration of the power, wisdom, and goodness of the I AM, whose "ways are from everlasting." These bright and brilliant manifestations are otherwise unattainable, because the races are, in many cases, extinct, or have no living analogue. I have an insuperable objection to the pre-Adamite hypothesis, for the following reasons:—In the existing chain of being, I cannot fail to perceive that *links are wanting* here and there, in order to complete the continuity; and I observe that the dinotherium, for instance, fills up the gap between the cetacea and pachy dermata, and so on with the pleisiosaurus, plonodactyle, and innumerable others. This being the case, I am reduced to the alternative, that these extinct beings either once belonged to existing Nature, or that the present order of existence was created imperfect—I confess that I see no escape from the horns of the dilemma. On the other hand, if these wondrous forms belong to an anterior creation, I observe no concatenation of being whatever, but isolated forms and disjointed links—a dance of fortuity: a convocation of saurions, and reign of reptiles, belong to poetical ramance, and may become the genius of the Dean of Westminster; but the assumption bewilders me. Sir Charles Bell, an able and a worthy writer, has said that man could not coexist with Ichthyosauri, and their fellows. Why not? A turbid atmosphere, and more turbid waters, have been assumed as the forbidding cause. Since that period, however, living *marine saurions* have been found. Where is the evidence of such an assumption, as this presupposes? The geological evidence, of the very reverse, is sufficiently abundant.

The trilobite, torn from its cerements in the palaozoic rocks, possessed eyes constructed like modern crustacea; and though the lenticular plates, as in existing allies, have fallen from their sockets soon after death; some have retained their places, and reveal to us the deeply interesting fact, that their construction is similar to the eyes of the libellula—full proof that the laws of light and vision were the same then as they are now, and further prove that the water could *not* have been troubled in its usual state, else light could not have illuminated the watery mass. I have two or three trilobites with their lenses entire, and have made repeated experiments with them, similar to those with the eye of the libellula under the microscope, when every face reflects its image, like a multiplying glass. The most perfect and beautiful eye of the trilobite I ever saw is in the possession of Mr. Hall, of Derby; it is the size of a small pea, and you can almost look into its interior!—add to this, *living trilobites have been discovered*—a fact announced by Silliman, and confirmed in a letter to me by Mr. Charles Lyell, who saw them. The slab of Solenhofen, which revealed the Pterodactyle, discovered also that of the dragon fly. The oyster secreted in these distant ages, as its conger does now, its *pearl.* The pearl oyster and its pearl, in a fossil form, may be seen in the Museum of Whitby. In my own possession are specimens of silicified wood from the chalk, perforated by some lithodonii, as wood is now pierced by the teredo navalis; also of the trochus agglutinatus, from the green sand—so that this trochus counterpoised its shell then, as it does now, with fragments of minerals, shells, and corals. The *gemma* on the fossil cycadeæ, in the Isle of Portland, are developed similar to those I meet with on the modern cycas revoluta, and the concentric cylinders, with their compression by the brumal blast, of the exogens of the "dirt bed:" these are every way similar to the exogens of our own forests. The dentition of the ichthyosaurus was precisely that of the modern gavial, or the crocodile. When the limb of a saurian, or a quadruped, was accidentally fractured, it healed by a *calus*, as in existing beings—the former I have witnessed in the Museum of the Philosophical Institution of Birmingham, the latter among the osseous contents of the Banwell cave; and, according to the researches of Walther, fossil bones were once subject to the same diseases that living bones are now—ancylosis, mollities, and necrosis. Superadd to those the fossil drops of rain on the same sandstone slab, which bears the footmarks of the cheirotherium, and then the ripple marks on the forest marble and the sandstone, where the ebb and flow of the wave are so clearly seen, and from which may be even determined the direction of the breeze which then ruffled its surface—full and sufficient proof that the laws of gravitation, and the physical consitution of the atmosphere, were precisely the same as they are now; and, to crown this "great argument," toads, entombed for untold ages, have leaped from their stony dormitaries to breathe an atmosphere chemically constituted, as when they were hermetically sealed up. I recognise in those phenomena the one supreme LAWGIVER—"the same yesterday, to-day, and for ever." These are splendid truths and sublime realities, which cannot

be controverted—they form the basis on which I am a dissentient from several prevailing geological speculations: I merely state them as having powerfully impressed my own mind. They stand in the relation of geological doubts, are personal opinions, and have nothing to do with controversy in any way.—J. MURRAY: *Portland-place, Hull, Dec.* 21.

THE SUPPLY OF WATER.

SIR,—As I observe a paragraph in your columns on the conduct of Thames water to the metropolis, and seeing that the supply of wholesome water to large towns is an object of sterling importance, a few remarks may not be out of place. A chemical analysis of the water is comparatively of *minor* import, and has *chiefly* a reference to the relative "hardness" or "softness" of water; and, as far as this extends, the well-digger's simple test of a solution of soap in alcohol, will yield a fair approximate indication. Let it be also observed, that the chemical analysis only applies to the period when such was effected; but there are cases where water is subject to *variability*, as in that which now supplies Hull, and may be subject to tidal influence. By far the *most important* test is that for ORGANIC MATTER, the nitrate of silver, and the *brown* tinge which supervenes. This, of course, includes both animal and vegetable germs—*both*, I apprehend, *noxious*—yet this most important of all features is one either entirely overlooked, or considered of minor or subordinate importance. There is another fact of consequence, which ought not to be lost sight of, and that is—mere *filtration* is of extremely limited advantage, much more so than is generally imagined. Filtration may arrest grosser feculent matter, but effectuates no charge on the chemical constitution of the water which passes through, nor arrests the progress of polygastric infusoria. The presence of organic life is derived from drainage issuing from impure sources, as in sewers, &c.; and the strictest and most guarded vigilance should be exercised in the sources which supply large towns and their teeming population: it is one of the chief safeguards of health. The heat of summer calls forth, in countless myriads, the infusorial animalculæ; and, though the beautiful and beneficent fact is now incontrovertibly established, that both the red and green infusoria are incessantly engaged in depurating the water, and distilling oxyene, so to speak; yet their presence bespeaks a morbid and unhealthy state of the waters, and when they perish a septic result follows; besides, I have yet to learn that potations of countless millions of infusoria minister to the well-being of health! Last summer, I could observe in the water that came to table, after it had percolated the filter, the restless *vibrio* by the unassisted vision; while the Stanhope lens revealed myriads of *monads*, and their countless associates; and this, too, in the only source of supply of the water of a large population! Now, this is a period above all others when the system is predisposed to attacks of cholera, fever, and other attendants of malaria. Shall it be doubted that *foul water* may seriously aggravate the evil; for my own part, I have no doubt on the subject.—J. MURRAY: *Portland-place, Hull, Dec.* 21.

THOMAS SAVERY'S INVENTIONS—THE PADDLE-WHEEL.

RESPECTED FRIEND,—Many of your readers and the public will, doubtless, be much surprised to hear, that propelling vessels, with paddle-wheels, is not a new or modern invention, though the application is comparatively new. It appears, by a pamphlet printed by J. Moxon, and sold at the Atlas, in Warwick-lane, 1698, that about the year 1696, Thomas Savery, gent., took out a patent for paddle-wheels. The title of the book alluded to is—*Navigation Improved; or, the Art of Rowing Ships of all Rates in Calms, with a more Easy, Swift, and Steady Motion, than Oars can.* Then follows a description of his plan, together with very clear arguments in its favour. The plan is extremely simple and effective; and I cannot but think it might, under many circumstances, be rendered useful even now, notwithstanding the present advanced condition of mechanics. Now, although the publication does not convey any new ideas, yet, as it may be interesting and amusing to many of your readers, I shall copy a few extracts, with brief remarks thereon. The same inventor took out a patent in July, 1698 (during the reign of William III.), "for a steam-engine for drawing water from mines, mill-work, &c.; and, 1699, exhibited a model thereof before the Royal Society, which model he worked by means of steam, which proved equal to his expectation and satisfaction."

In the address to the reader, in the pamphlet alluded to, are the following remarks:—"Kind reader, if you give yourself the trouble to look into this small treatise, pray read it through, and you will find, my reputation being concerned—a thing upon which my welfare doth depend—I am necessitated to write it; for after I had troubled my thoughts, and racked my brains, to find out that which a great many have spent several years in vain in the pursuit of—when I had brought it to a draught on paper, and found it approved by those commonly reputed ingenious, and receiving applause, with promises of great reward from Court, if the thing would answer the end for which I proposed it—after I had, with great charge, and several experiments, brought it to do beyond what I ever promised or expected myself—at last one man's humour, *and no more than a humour*, totally obstructed the use of my engine, to the great disservice of both king and country, and my no small loss. *But it is the nature of some men to decry all inventions, how serviceable soever to the public, that are not the product of their own brains.*" Thus, it appears, that in those days, as at *present*, there were envious, ignorant, and officious individuals, who declaim against *the unfortunate ingenious mechanic, designating them as scheming projectors, &c., because they have not the candour to approve, or brains to comprehend, the merits of the plan or design proposed.*

The author then proceeds to describe the details of his plan (which I will endeavour to explain in your next publication); and then alluding to an expedition, he says—"Now, the gentlemen that were on the Brest expedition, with my *Lord Carmarthen*, must know how useful this engine would have been; for had they had them on board each ship, they might have rowed themselves where they had pleased; and, if occasion had required it, they might, in each ship, have employed above 120 men in rowing at the capstand, which must needs have given the ships better way than by towing with six boats a-head, which do all by jirks; for when the hawser, by which the tow is made, is extended, it gives a sudden pull to the ship, which not only deadens the boat's way—but by that time the boat, or boats, have gotten fresh way again, the ship has almost lost her motion, and so gives another tug, which common experience shows to be of small use in water, and not a kin to a blow on water, which, the harder it is struck, the less the thing that strikes it penetrates, which is plainly seen by a cannon ball, which, being easily let fall into the water, sinks, but, being shot into it with great violence, rebounds as from a mountain of brass—by which it is plain, that a solid, steady motion, and such as shall give the particles of the water time to shift places, and make room for what is to pass through it, is the only agreeable motion to water; and in this we exert oars in boats very much, for their very work goes by ticks—nay, in short, even sailing itself is not so steady a motion as that which is made by this engine, except it be in a very steady gale indeed; but the impelling force of a gale of wind, being generally so far superior to men's strength, I dare make no comparison; but only where the impelling force by men, and that by a very easy gale, is equal—though this engine would be a great help to a small breeze, and will, in still weather, force a ship either backward or forward at pleasure, without towing the ship, steering as well one way as the other, which is of great use to get out of a harbour, narrow channel, or river, so that the usefulness of this engine for packet-boats, bomb-vessels, by night or day, or such other ships as it is applicable to, seems very considerable."

The author, speaking of his application to the Admiralty, says:—"A few days after the secretary told me that the King had seen my proposals, and that I need not fear, for that the King had promised me a very considerable award, and that I must go to the Lords of the Admiralty to put it in practice, but that I must first make a model of it in a wherry, which I did, and found is to answer my expectations. Then I showed a draught of it to the Lords of the Admiralty, who all seemed to like it; and one amongst them was pleased to say, that it was the best proposal of its kind he ever saw. So I was referred from them to the Commissioners of the Navy, who all seemed to like it; but told me that the model must be surveyed by Mr. D***, the surveyor of the navy, whose opinion I asked—but he *was very reserved*; and said that a wherry was too small a thing to show it in there being no working at a capstand in a wherry; but he told me it was a thing of moment, and required some time to consider on; for should (he said) I give a rash judgment against it, I should injure you—or, for it, the charge of putting it in practice must prove a loss to the King, and endanger my employ; but if you will (says he) give me a draught of the several sizes of the engine, I will give you a draught of the half-breadths of the several rates to proportion them. The week following, one Mr. Fraser, under surveyor of the navy, came to me from him, with draughts of the several half-breadths, which I immediately returned, with draughts of the size of each engine; after which, Mr. D*** would never discourse me, or let me know one word of his opinion—but, four months afterwards, sent a report of it to the Lords of the Admiralty, which I was prepared to answer as follows, but was refused by their lordships."

Capt. Savery appears to have well understood his subject; and I think, considering the time lost by recovering the oars, together with the irregularity of motion by men in boats, that it is reasonable to conclude, that 120 men, equal to 20 horse, would be more effective than 200 men rowing in tow-boats. I will furnish, I hope, in your next publication, some further extracts and remarks, together with a description of his plan.

Bristol, Dec. 15. THOMAS MOTLEY.

THE THEORY OF VENTILATION.

SIR,—At the present moment, when your paper is teeming with accounts of accidents in our coal mines, arising from the explosion of fire damp, an inquiry into the cause of those accidents, and an investigation of the laws and phenomena of the atmosphere, and a general application of those laws and phenomena to colliery ventilation, will, doubtless, be acceptable to the great majority of your readers. As stated by Mr. Deakin, in your Journal of the 12th inst., in nearly the following words—"colliery workings are so complicated and varied in their local situation and circumstances, that it is perfectly impossible to lay down any one plan for general adoption;" and in which, so far as ventilation is concerned, I entirely coincide; or, in other words, so much depends upon the laying out of a mine, or the method adopted in working it, that I am of opinion, that any particular plan of ventilation, like a patent medicine, prescribed in every case, without any relation to the peculiar circumstances in which it may be applied, would be inoperative, useless, and mischievous—inoperative, because of their non-adaption to every case; useless, because only part of the mine is, probably, sufficiently ventilated; and mischievous, as they induce a reliance upon their merits, of which they are not worthy—and probably, from such reliance, may produce the very catastrophe they were intended to prevent. In accordance with these views, no particular plan will be proposed; but this, and the following communications in the series, w ll be composed of a collection of facts and data applicable to colliery ventilation—the practical application of those facts being necessarily left to the judgment and discretion of the colliery agent.

The atmosphere, from its paramount importance in every plan of ventilation, demands our first attention. The atmosphere was, for a long time, supposed to be destitute of weight; and this is not surprising, since, being born in it, its effects are not at first observable. The cause of the discovery of its weight was purely accidental; but the discovery itself, like all other scientific discoveries, was the result of thought. The ancient philosophers were aware of the fact, that water would rise in a vacuum; but, not knowing the law by which it was governed, they concluded that Nature abhorred a vacuum—and that, in consequence of such abhorrence, she filled the vacuum with water: this hypothesis was, however, found to be untenable. Some sinkers, having fixed a set of pumps in a well at Genoa, above 33 feet in length, found that, after forming the vacuum, the water would not use above 33 feet. Galileo, the astronomer, was applied to; and his opinion was, that Nature did not abhor a vacuum above 33 feet, and with this opinion the scientific world was generally satisfied; but Torricelli, a pupil of Galileo's, reasoning upon the subject, concluded, that if Nature abhorred a vacuum for 33 feet, she would raise any fluid to that height, however dense. He tried the experiment with mercury, and found that in this case, after forming a vacuum, the mercury would not use above 30 or 31 in. From a calculation of the weight of the two bodies, he found they were precisely similar; and that, consequently, the same amount of power was required to support the 31 inches of mercury, as supported 32 feet of water. By this experiment, he demonstrated the height of the atmosphere, its weight, and some of its most important properties—and satisfactorily shewed, that Nature had not an abhorrence for a vacuum; but that this phenomena, like all the operations of Nature, was in accordance with a settled and immutable law. If the bore of a tube, containing mercury, be one square inch in the cross section, then it will be found, that every 2 inches of mercury will weigh 1 lb.—consequently, if the height of the mercury in the tube be 30 inches, its weight will be 15 lbs.; and as the pressure of the atmosphere is capable of supporting this column of mercury, its weight or pressure is ascertained to be 15 lbs. upon every square inch of the earth's surface. If the pressure of the atmosphere was constant, the phenomena of its consideration, so far as it applies to the ventilation of collieries, would be unnecessary; but it is a fact of daily occurrence, that this is a varying pressure—sometimes being equivalent to a column of only 27 inches, and at other times to a column of 30. From the nature of fluids, it follows that the air of the atmosphere presses against any body with which it comes into contact: fluids press equally in all directions—upwards, downwards, sidewise, and oblique. The amount of pressure of a column of air, whose base is one square foot, and altitude the height of the atmosphere, has been found to be 2156 lbs. avoirdupois, or nearly 15 lbs. of pressure on every square inch; and this is, consequently, its pressure when in a state of rest; but, in accordance with a well-known law in mechanics, its pressure, when in motion, will be indicated by the compound number representing this pressure, multiplied into its velocity. It will be unnecessary to give the relative compounds of the atmosphere, or in what manner they are compounded, or to enter upon any inquiry relative to their several and respective properties: such inquiries might be interesting, but not, so far as the ventilation of collieries is concerned, useful; and as utility is my object in this series of communications, I will proceed forthwith to apply the most prominent of the above phenomena to the ventilation of a colliery. I, therefore, propose to divide the subject into the following divisions—namely:—1. To a consideration of the nature and qualities of the gases met with in the mine, and to their origin and effects.—2. Of the various methods employed for their neutralisation; and, 3. An application of the laws and phenomena of the atmosphere to the ventilation of a colliery; and I purpose each of these divisions to form the subject of a separate communication—not pledging myself to continue them in each successive Journal until completed, yet I promise you such completion shall be effected with as little delay as possible. You have, from time to time, directed attention to this most important subject; but those communications, which have appeared in reply to your call, have, in general, been of too practical a character; and, although highly efficacious in the situation in which they are adopted, are, perhaps, wholly or partially inapplicable in any other situation. It most, however, be admitted, that these communications have been productive of much good, having directed attention to a consideration of the subject, which might otherwise never have been bestowed. Yet I submit to your superior judgment, that something else, in addition to a purely mechanical ventilation, how perfect soever that ventilation may seem to be, is required; and that a theoretical knowledge of the principles of ventilation, comprising the weights and specific gravities of the atmosphere and gases, and their varying properties, in rest and motion, is imperatively required, and only when combined with the practical operations of underground workings can make the efficient ventilator. Theory will give a reason for the operations of practice, and theory will regulate that practice, in accordance with the laws of science, and the exigences of the case.

I propose, in these communications, to attempt to fill that chasm, and I hope some of your talented correspondents will take up and continue the subject with me: its importance is great, and its extent boundless—its name is infinity. A simultaneous consideration of the subject may develope properties yet unknown, and may give us the means of safe, sure, and ventilation.—F. B.: *Dec.* 15.

ON THE WELSH MODES OF GETTING COAL.

SIR,—I perceive my communications on Welsh mining have called forth no less than three effusions from three different correspondents: I know not in what terms to address myself to them—in one time they ridicule me and my propositions; in the next they praise me, as if they said, we will kick you as long as we dare; but, if our attack appears too severe or pointed, we will, to cool your ire, caress you. However, as some of the objections raised appear feasible, I will reply to them in detail, premising that those objections have arisen either from my want of perspicuity in explaining the subject, or in the want of perception by my opponents, and, as I shall show, do not militate against the system on its merits.

I will commence with "D.;" this gentleman says, that he is of opinion that I have mistaken the "oblique slips or riders" for the slips. I presume an inspection of figure 1 in your Journal of the 5th inst., and which, as there stated, is a copy *of actual workings*, will show "D." that I have not made the mistake he mentions, as the slips upon that figure will be seen to bear nearly as he states. I did not in my previous communications notice these backs, cutters, or "oblique slips," although perfectly aware of their existence: I reserved them for an additional advantage above those expressed to flow from my proposed mode of working, confident that they would develope themselves in practice. I did not want to promise more than I was positively certain would be accomplished; but was rather anxious that the system should be found superior in practice to what it was described in theory. "D." then states, that my remarks are only applicable to those "*very, very far* behind in the march of intellect." If they are *only* applicable in these cases, then I must inform your correspondent that they are *nearly* applicable to the whole of South Wales; for I can assure him that, although there are some instances in which they are not to the full extent applicable, as stated in my previous communications, yet I do not hesitate to say, they are applicable in nine-tenths of the collieries in South Wales; and I am surprised that "D.," conversant "as he is with coal mining in Glamorganshire," has not noticed it. To the charge "of ignorance," or, otherwise, "of making a statement at variance with the fact," I make no reply: personally he may condemn me—I heed it not; I have no desire to sully the moral beauty of your paper with vituperation or invective. I agree with "D." that the plan I propose is simple—simple in theory—and, also, I have no doubt, will be found simple in practice; all good things are simple. I must, however, state, that there are some things, even in its simplicity, which "D." has not discovered. He then proceeds to ask—1. If I think my method applicable to the Welsh seams? —2. An echo of the first; and 3, am I prepared for the squeeze likely to come upon the legless pillar? and then, as if he had propounded some formidable propositions—as if he had shaken my proposed system to its centre —he inquires, are you prepared to change your system? are you prepared to give us something else, which we will promise you shall have our most candid, deliberate consideration? and, if your proposed plan shall be of so comprehensive a nature that it shall not be open to any objection, but shall be applicable in every case, and under every circumstance, then we will consider it worthy of attention. This, Sir, requires no comment; "D." has, in these lines, stamped himself as one of those referred to in my communication of the 5th inst.—viz.: "who are wedded to their own opinions, opposed to change, and who refuse to weigh the merits of the proposed changes"—and I might, consequently, in accordance with that communication, here close my letter, and say, "reason will be lost upon him;" but as "D." might construe such a course into victory, I will answer his questions, and dissect his letter. Those questions are too simple to require any great stretch of thought, and do not claim that importance from their merits which they seem to demand by their arrogance.

I have not claimed, nor do I claim, impeccability—in fact, I have repudiated any such idea—see my communication of the 5th inst. To "D.'s" first, I answer, most certainly. I consider my plan applicable to the seams mentioned; if not, I may ask, why should it be propounded in connection with them? Does "D." speak rationally, under the circumstances, when asking the question? I can see the obvious reason and intention of "D." in putting this question in its present form; but I pass it over as unworthy of notice, satisfied that this, together with his other insinuations of a similar character, will only pass with the readers of the Journal for their legitimate value. The second, being an echo of the first, merely requires an echo of the answer. To the third, "Has he prepared for the squeeze?" &c. Your correspondent ought to have known that this "squeeze" forms a prominent advantage to be reaped from the proposed mode of working in which it will be brought into operation; that I have made its action a *sine qua non* in my method—consequently, I am prepared for it. With the slight inaccuracies and misrepresentations of "D.," I shall not meddle. I must, however, express my surprise at the erratic appearance of the matter of his letter; approbation, disapprobation, surprise, scorn, and fear, seem to have been the motley mixture from which his letter is compounded; and so intimately are they mixed, that, in his letter, it is impossible to tell where one begins or the other ends. "D." evidently wishes to convey the idea that my plan is not new; and he says that a want of knowledge has caused me to propound it. If the method is not new, then am I deficient in observation; but let me ask, if it is not new, why should it call forth three communications in one week—and those communications which all attempt to "damn with faint praise?

Much as I was surprised with the first part of "D.'s" letter—much as I was impressed with his penetration and judgment—I certainly did not expect the opinion expressed in the remainder of his letter, commencing thus—"Persons, conversant with ventilation, will see little difficulty" in thoroughly ventilating a colliery, according to my plan. I must state, as a freewill offering to "D.," that the ventilation of these headings—a ven tilation which to him appears perfectly easy—and, from its appearing so, *he* must necessarily be conversant with ventilation—was *to me* a formidable objection, and one which cost much thought and attention—their ventilation being a matter of the greatest consequence to the full development of my system. We are informed, that there is but one step betwixt the sublime and the ridiculous. "D.'s" letter is a beautiful illustration—it is sublime to see no difficulty, and it is ridiculous, at the same moment, to see insuperable objections. *He says* there must *necessarily* be narrow air-roads driven to ventilate the cross-headings; and he asks me, if I am aware of the expense of driving them? and he tells me, that they would swell the cost. "D." says my plan is simple—it was my intention to make it so; but why, I may ask, does "D." attempt to encumber its simplicity with additions in nowise necessary, and then attempt to father them upon me? My plan, as shown in figure 2, indicates no cutting for air-roads—consequently, if they are required, the plan would be defective. I beg to inform "D.," that air-roads in the manner he describes, as "must be necessarily driven," will not be necessary—and, consequently, will not be driven, and their cost not incurred; and, therefore, these—the *summum bonum* of his objections—are shown to be nullities. I am then charged with jumping at a conclusion, when I say that the coal would be got with less labour. To this assertion I make no reply—"D." having saved me that trouble, for he himself negatives that proposition; he tells us, that the coal is got easier on the line of bearing than it is on the line of direction, and *that* is all I contend for. I may retort upon "D.," and say, that he has, in the latter part of his letter, been jumping most outrageously: he has jumped to the conclusion, that air-roads will have to be driven to ventilate the cross-headings—that they will cost a deal of money—and, to crown all, that they form a necessary part of my arrangements. In all these matters he has jumped wrong, and shown the folly of forming an opinion, and giving judgment, upon *ex parte* evidence. If he had taken the rational course of asking, how those stalls would be ventilated, I should immediately have given the method I propose; after that, if he had thought proper, he might have *cut his capers*. I now take leave of "D.," merely expressing my sorrow that he has not time to go into ventilation with me, as I am of opinion that, from the penetration and judgment developed in treating on the method of working the coal, he would have produced something splendid in ventilation: with this, as with *his figures*, he may perhaps, consider that prudence is the better part of valour; or he may, perhaps, remember the saying of one of old—"Oh! that mine enemy would write a book." My system, so far as "D.'s" objections are considered, remains as he found it. If he considers himself competent to discuss the question, I have not the slightest objection to do so; but let him beware of personal invective—let him confine himself to the merits of the question —let him write as a gentleman—and, the moment he finds such a course incompatible with his views, let him drop the subject. Argument will tell, scurrility cannot.

I now turn to Mr. Deakin, of Blaenavon. Knowing the combative temperament of this inexhaustible correspondent, I fully expected he would reply to my communications on "Mining in Wales;" I am only sorry his remarks in this instance do not add to his character for penetration, sagacity, or judgment. He sets out, with expressing surprise at the state of things described in my communications; says that he is not liable to the charge, and inquires who is?—knowing, when he penned the inquiry, that it would not be answered. I shall not particularise any instance—I will not injure, or attempt to injure, any man. Mr. Deakin need not travel far from home for an instance; he seems to confine himself to a consideration of the merits of figure 2, in a purely *l. s. d.* view, admitting the superiority of my method of working, but for the increased expense, and which he attempts to show will counterbalance any good to be derived from its introduction; he has evidently been at much trouble to little purpose, as his calculations and deductions are founded upon an hypothesis not tenable from the circumrtances of the case; and, therefore, his formidable superstructure of figures becomes impotent and powerless. I have shown, in my answer to "D.," that the air-roads calculated by Mr. Deakin to cost 18*l.* 18s., and yield 126 yards of small coal, are *unnecessary*, and will not be driven—so much, then, for that objection. Mr. Deakin further says, that there would be a balance against the new method, of 56*l.* in headings alone. I must here, before proceeding further, thank Mr. Deakin for his candour, in admitting its novelty. If Mr. Deakin had paid merely common attention in his perusal of the letter, containing the improved mode of working, he would have seen, that it forms no part of my system to drive the cross-headings of any particular width, and he also would have

seen, that I left to the discretion of the agent what the widths or size might be; if he would drive them as he states, it certainly would not be much in favour of his sagacity or judgment. If they are driven stall-headings, they would require no yardage, and would save the 58*l.*, and the rest of the small coal, about which Mr. Deakin makes so much parade. I might, by a similar calculation, show that the balance in both coal and money is against Mr. Deakin's mode of working. I have previously made the assertion, I have now disproved a statement made to the contrary, and, consequently, occupy the position I did, previous to Mr. Deakin's letter.

To his inquiry, how I would ventilate a fiery colliery, I can return no answer,—Mr. Deakin himself answering the question as follows:—"I have been a practical collier through a long life, and am perfectly aware that 'colliery workings are so complicated and varied in their situation and local circumstances'—so much so, that I know it to be impossible to lay down any one plan for general adoption." Mr. Deakin comes to the conclusion, that "'F. B.' has completely failed to show that his plan is *in any situation* feasible." This, my dear Sir, is what we should vulgarly call *a stunner*; but I shall leave that assertion to produce its effects, and shall not elevate it, by paying it any attention. I now close my correspondence with Mr. Deakin, and advise him in future not to let his judgment be hoodwinked by his prejudice.

"W. O.," I presume, is not a collier. I will not take up your valuable space by summing up the letters of "D." and Mr. Deakin, nor by showing their disagreement with each other. The space betwixt "D." and Mr. Deakin is full as wide, and their statements as incompatible, as either of them is with "F. B." "D." and Mr. Deakin have, with a most reprehensible tenacity, seized and clung to the description in figure 2, without giving me credit for the observations contained in my letter accompanying it. I stated a *general principle*, which might be varied considerably in practice; they seized upon it as a *particular illustration*, and they are, consequently, wrong.—F. B.: *Dec.* 15.

THE UNIVERSAL ATMOSPHERIC SYSTEM.

SIR,—In my last communication I mentioned that the traction pipe of the atmospheric railway should be semi-cylindrical, that guide-wheels should work against the edges of its bed or bottom, and that the flange should be dispensed with, &c. The flange, however, is not the *only* thing in the present railway system which is mechanically defective, there are other portions equally, if not more, so. The fixing of both wheels on the axle, if the lines upon which they are to run are not straight, is a very great defect—and one which, to a certain extent, renders necessary the existence of other defects, which, while they diminish the ease, increase to an alarming extent the dangers of railway travelling: I mean the narrowness of gauge, and the great height to which the weight of a carriage is raised; for, if the wheels were at liberty to revolve independently of each other, there would then be no necessity for so narrow a gauge, and, consequently, no necessity for raising the weight so high—the one defective part infects the whole machine, and puts it all out of order. The narrow gauge has been adopted to enable carriages, with their wheels fixed to their axles, to follow the curves of the line with greater facility than they would do if the gauge was wider; but either the lines should be straight, or the wheels at liberty to revolve independently of each other, and in any case the lines ought to be much straighter than they are. If they were straight—and I cannot see any good reason why at least *trunk* lines might not be straight, or very nearly so—then the fixing of the wheels to the axles would be an advantage, which, combined with a broad gauge, would add greatly to the steadiness of the train. A cylinder of equal diameters and circumferences is a fit instrument for making of "right lines;" but it is by no means a fit instrument for describing of circles. The idea of making curves, or lines, of unequal lengths, upon a straight plane with such an instrument is a geometrical absurdity, and in practice it is a mechanical disorder; which disorder is inherent in the *locomotive* system only—the *atmospheric* would be free from it. I will not say that it is *impossible* to construct locomotives without this defect, but I think the difficulty is too great for it to be practicable; but in the atmospheric system there is no necessity whatever for fixing the wheels in such a manner that one cannot revolve without the other; nor, indeed, is there any necessity for doing so with the carriages drawn by the locomotives—the locomotive engine itself is whole and sole heir to the defect. The object, I presume, in fixing the wheels of the carriages on their respective axles is to give steadiness, to prevent vibration, &c. I will suggest an arrangement, by which these objects will be secured in an equal degree—whilst each wheel would be at liberty to revolve, independent of the other. The plan is, to provide each pair of wheels with a sort of double axle, or an axle with one part, which should be attached to one wheel, solid and cylindrical; and another part, which should be attached to the other wheel, hollow, to suit it. The hollow part need not *fit* the solid in more than three places, and, perhaps, not more than two; the solid axle may pass up the hollow one nearly its whole length—so that, with a broader gauge, the wheels would have a less chance of vibration than they have at present, and each wheel would be at liberty to revolve quicker or slower than the other, as might be required. The axles, revolving in the same direction, and, except on the occurrence of curves, at the same velocities, the friction that would be caused by the slight occasional difference of velocities, would scarcely amount to anything. I need not explain how the parts should be fitted together; any working or practical engineer could determine that: this kind of axle would slightly enhance the first cost of a railway carriage, but nothing in proportion to the advantages to be gained by its adoption.

We will now return to the consideration of the flange. There is little doubt, that had it been contemplated previous to the commencement of the railway system, that trains would run at a speed of 50 or 60 miles an hour, some better contrivance than a flange on the rim of the wheels, for keeping them on the rails, would have been provided, even at a slow speed: the flange, although quite adequate to keep the wheels on the rails, so long as the projectile force is insignificant, must, by its very nature, create great friction, and consequent resistance; but, in proportion as the speed shall increase, so will the friction and resistance of the flange increase, until it becomes greater than the whole *available weight* of the carriage, when it will rise on the rail: were it not for the increase of friction caused by the flange, the resistance from *friction* would be less with high than with low velocities; and if the flange *was* capable of preventing the train from running off the rails, there would be great danger, and especially as the carriages are raised to so great a height, on such a narrow foundation, of their being thrown over—in fact, at high speed, round sharp curves, such a result might be calculated on with absolute certainty: the flange is likewise applied in direct opposition to a well-known natural law pertaining to bodies in motion. Experience has taught us, that, when a body is in motion, it may be diverted from a direct line, by causing it to meet with more resistance on one side than on the other: on this principle the centrifugal force of a train may be diverted with atmospheric breaks: vessels of the greatest magnitude are guided in any desired direction with astonishing accuracy; but the flange increases the resistance on that side of a train, which, to follow the curves of the line, should proceed the fastest, and which ought, therefore, to be the least resisted; and there are various reasons why the flange would not act so well on the outer edge of the wheel. For these and various other reasons which might be brought forward, I consider that guide-wheels would, in every respect, be better than the flange. If wheels is better than flanges for carrying the *weight*, which, at high velocities, are but trifling, why should they not be better than flanges for directing or diverting the *centrifugal force*, which, at high velocities, is fearfully great?—but, if flanges are better than wheels for the latter purpose, why not use them for the former, and dispense with wheels altogether? The plain and undeniable fact of the case is, that the flange, whether straight, concave, or of any other shape or form, is, as it has been properly designated, a "disorder;" and so long as the railway system is made up of this and a complication of other disorders, some of which have been pointed out, so long will our lives, when travelling by railway, be placed in jeopardy; but let a broad gauge take the place of the narrow—let the weight be placed as low as practicable—let each wheel have freedom of action—let guide-wheels take the place of the flange—and, lastly, let the atmospheric system take the place of the locomotive engine—and, with other necessary arrangements, not one accident will occur for every 50 under the present system. With such an arrangement as proposed, we might travel in *perfect* safety at speeds which the locomotive, *on account of its very limited available weight at high velocities*, is not capable of. It is, because I consider that the *safety* of the atmospheric system will be much enhanced by the substitution of guide-wheels in place of the flange; and that the bed or bottom, or straight side of a "semi-cylindrical" tube would be available for this purpose, and likewise on account of its great simplicity, that I have considered such a tube preferable to any other that has been proposed, or that I could conceive.

The bed of a tube, with a capacity equal to the tube on the Croydon line, would be about 2 ft. wide; it might require to be at the edges an inch-and-a-half or two inches thick, and between these about three-eighths or half-an-inch. It should be grooved on the upper side, near the edges, to receive the tube. The inner sides of the grooves should be perpendicular to the face of the bed, and should have a piece of leather, or some compressible material, fixed against them. The outer edge should be inclined outwards, for the purpose of facilitating the entrance of the edges of the tube, and of forcing it tighter against the leather packing. The groves should likewise be supplied with some suitable grease, or gummy material, to make the joints air-tight. The bed of the tube should be firmly fixed in the centre between the rails, at such height as would allow the axles of the carriages to pass the tube freely, without coming in contact, but no more room than was necessary should be given. The tube is merely a thin piece of sheet-iron of a semi-circular shape, standing in the groves provided in the bed. Transverse valves, and valves to let the air from the tube into the main, should be provided about every mile of its length, and a person should be stationed at each valve, for the purpose of opening and closing it, and also for the purpose of watching and attending to the line, &c. The valves should likewise be made self-acting. The piston should be double-headed, and provided with wheels for raising the tube while it passed: perhaps this could be facilitated by magnetic attraction. The ends of the piston should be so made, that they might be opened or shut, or caused to fit the tube air-tight, or pass it freely, by the man in the piston-carriage: this can be done by the use of an incompressible liquid. The advantages of the double-headed piston and frequent valves are—1. The economising the power by using the air expansively, and thus avoiding the necessity for letting the air into the main, at a less degree of rarefaction than that which it contained.—2. The preliminary exhaustion being performed by each train before it leaves each section of the tube, trains may start more frequently, or, if required, almost directly after each other;—and 3. Trains may, when required, be stopped without a loss of power; and no more power need, at any time, be employed, than is requisite.

I have an idea that the sheet-iron for the tube could be prepared in long lengths, gauged to a width, &c., and wound round a large wheel, attached to a proper kind of truck, taken to the place for which it was intended, passed through a machine, which should set it to its required shape, and left on the bed in its proper place. The tube and bed, with proper frames for fixing, would weigh from 140 tons to 150 tons per mile; and reckoning the whole, when fixed, to cost, on the average, 10*l.* per ton, would be about 1500*l.*—so that, including valves and every requisite, it would be under 2000*l.* per mile; closed tubes, of sufficient capacity, could be put down for 1000*l.*—making together, 3000*l.* per mile for a single line, and this would, with proper management, be sufficient, unless where the traffic was very great; and on small branch lines, half this sum would be ample. The *power* will cost little or nothing, except the expense of the machines; and taking the difference of wear and tear, and of all other circumstances, into account, the atmospheric will be not only infinitively *safer*, but, likewise, the most *economical* of the two systems.

Some persons may doubt the practicability of making vessels sufficiently air-proof "to conserve for hours rarefied air in them;" but I have no doubt of their being made perfectly air-proof, if a vessel can be made proof against water, and we know it can. Why should not the surrounding a vessel with water make it proof against air? I can see no reason why they should not be made air-proof, even with brick and cement, or earthenware pipes, &c.; and if this can be done, the close tubes may be made large enough to serve for magazines, and the necessity for *compressed air* magazines will be obviated, and the loss from friction in the transmission of power will be very much reduced by having large transmission pipes or "tunnels," as before spoken of, and power, for whatever purposes required, could be communicated through those pipes and tunnels. A little experience will remove a multitude of objections, and, finally, establish the fact of the great superiority, and universal applicability, of the atmospheric principle. I hope that scientific gentlemen will investigate this system, and, if found deserving, give it their hearty support, and hasten on the adoption of a national, and, finally, of an universal, atmospheric system.

Portland Town, Dec. 9. J. WESTON.

P.S.—"Prudentia" has my best thanks for his good intentions. The arrangement which I propose is not the same, nor even similar to that proposed by Mr. Etzler, for cultivating the land. He does not propose to apply the atmospheric principle at all, except in the use of the ordinary windmill: he transmits his stationary power by ropes, drums, &c., to his "satellite," which travels with the cultivating instruments over the rough-ploughed ground. I was previously acquainted with his plan; and if the "satellite," or "iron slave," as it has since been called, *has* succeeded, it has falsified my predictions; but I do not believe it has. I recollect reading an account of its success, which was copied into the *Mining Journal* from an Indian paper, but, at the time, looked upon it as being "got up." I propose to lay out the land to be cultivated in areas of parallel breadths, and to cultivate it by atmospheric engines, passing along its sides, not by moving them over the soft and rough-cultivated land. I will further explain my plan shortly.

ON CENTRAL HEAT.

RESPECTED FRIEND,—As R. Mushet does not consider my arguments conclusive, and as I am of the same opinion as regards what he asserts, I will beg permission to express a few words on central heat. R. Mushet says, that "a mole, burrowing in the soft mould of a mountain side, might as well attempt to disprove the existence of a hard rock in the heart of a mountain, as that a miner should draw conclusive arguments against central heat, or fusion, from the evidences he can collect within the limited field of his operations;" and yet it is the heat which is found in this limited field which he brings as an argument in favour of central heat: but when I stated that mines have been worked in great depths, I was alluding to the neighbourhood of volcanoes, which he says are caused by the crust of earth being thinner in one part, causing it to break out. I meant that, if this really was the cause of volcanoes, a greater amount of heat must exist in mines worked in the neighbourhood; for, if we suppose the crust of earth to be 21 miles in thickness, and matter to be in a state of fusion under it, we must either conclude that a volcano is a well of fire 21 miles in depth—the fused matter being thrown from under the crust—or, with R. Mushet, that at a comparatively small depth, the crust, having been acted on by the central heat, it has been left so thin, that the centre at length broke out to let the caloric escape—a thought not very consoling for those who live on the thin crust. It was in supposing the latter to be the case, that I alluded to the fact of mines not being warmer in the neighbourhood of volcanoes than in other countries, which statement R. Mushet evidently misunderstood. It is true that, as far as the limited field of man's operations extends, the heat has been found to increase with the depth; but may not this heat be the result of other causes than central heat? My opinion is, that the gases in this limited field are fired by electricity, and that the heat thereby produced is distributed through the earth's surface; but that, when a large quantity of gas is accumulated in one place, a few thousand feet below the surface, and suddenly fired, an earthquake is the result; when, on the contrary, the gases have time to accumulate from a great depth, they form a current to a common centre, where, igniting, they cause the fusion of matter, which, by its rapid expansion, may cause the earth around to be raised to some extent, and cause other phenomenon which some have thought to be result of central heat; this might, in some measure, be proved by referring to the explosions in mines, which no one will assert are connected with central heat. When the gases are permitted to accumulate, they cause explosion not unlike volcanoes; and, in fact, some mines have been rendered useless by such explosions. Here, then, we have volcanoes on a small scale, which are not caused by central heat, and that such explosions from the same cause may take place without a shaft having been sunk in the earth, can hardly be denied, and in that case the existence of volcanoes, on a larger scale, may be accounted for, without going 21 miles in depth for fuel to feed them with. The heat in great depths may be also the result of the same causes; for heat, when once generated will be more easily retained at a great depth than near the surface—so that the heat, increasing as we proceed lower, no more proves the existence of central heat, than the existence of mould on a mountain disproves the existence of solid rock in its centre.

We find volcanic action active on the highest mountains, simply, in my opinion, because they present a large amount of surface to the atmosphere—the gases they contain being more readily ignited than in other situations, so that their form is favourable to the existence of volcanoes. The matter being once fused, continues in that state, while there is sufficient gas in the neighbourhood to produce combustion—after which, the volcano expires for want of fuel. Now, if we suppose central heat to exist, we must suppose that the thinnest part of the crust must be beneath "the dark, unfathomable depth of the ocean;" yet it does not appear that eruptions take place there, and, of course, if such was to be the case, the most terrible convulsions would be the result—for the fused matter, and the water, coming suddenly in contact, would quarrel to such an extent, as probably to shatter the globe to pieces; the cause appears to me to be, because the communication between the earth and the atmosphere is cut off by the water; and, without a communication, the gases under the bed of the water cannot be fired—for whenever the sea has been agitated by earthquakes, it was the effect of earthquakes on land. The consideration of these facts may suffice to explode the thin-crust theory.

The arguments of "F." appear certainly novel: he says—"When we consider that space is void (is he quite sure of that?), and, consequently, void of heat, it becomes quite evident that, if our earth had no other heat than what it receives from the casual vicissitudes of the sun, it would be perfectly uninhabitable;" and, further, "who could winter through the long polar nights, if there was no heat but that derived from the sun?" According to "F.," the negro ought not to attribute his black skin to the effect of the solar rays, nor should he complain when toiling under a "burning sun," since the amount of heat bestowed on him by that great luminary is "trivial compared to what the earth requires,"—neither should the inhabitants of those dreary regions near the poles feel uncomfortable in the absence of the sun, since a far greater amount of caloric is stored under the ice for their immediate benefit. Capt. Ross did not, however, reap much benefit from central heat; but, perhaps, it was because the fact was not explained to him by "F." before he left England. A Russian captain, who was sent several years since from St. Petersburgh in a northerly direction, stated, on his return, that every time he removed the fur skins which covered his face, to breathe fresh air, he felt as if his lungs were being scraped with a saw; but, perhaps, this was only the result of imagination—for, if one can persuade a man that he is warm, he will cease complaining of the cold. The lessons which "F." could teach in this line might work wonders. It is evident that the theory of central heat is connected with that which teaches that all matter was once heat—of course, oxygen included—a theory which is fast disappearing from human brains; in fact, no one ever attempted to prove how heat became matter—nor, supposing it to be the case, how it is that matter, when deprived of its heat, and of its power of giving heat by friction, is not changed in its component parts. The fact is, that all theories which attempt to account for the existence of matter are vague and absurd. We might as well say, that matter was once light, as that it was once heat—the one assertion would be as plausible as the other; but philosophers begin to see otherwise than entertain such notions; and it is probable that the theory of Dr. Payerne will be universally adopted. Instead of supposing heat to be connected with the origin of matter, he supposes that heat is the result of its existence—that is, that heat cannot exist without matter; or, to use his own words, "cold is the sign of the chemical repose of bodies, heat of their animation or mobility." JOHN DE LA HAYE.

Liverpool, 12 mo. 10th.

COLLIERY EXPLOSIONS.—The following letter has been addressed to the *Times* by Mr. Joseph Sturge:—"The fearful loss of life which has recently taken place by explosions in coal pits, and especially the one which occurred 8 or 10 miles from Birmingham, where about 20 persons were killed, and their surviving families involved in the deepest distress and poverty, must be painful to every feeling mind, and ought to lead to the closest investigation as to whether it be possible to devise an effectual remedy. Though not often disclosed by the verdicts of juries, those who have closely examined the evidence given on the coroners' inquests have probably been struck with the frequency of accidents of this nature, arising from a carelessness which strict vigilance on the part of the proprietors might have prevented. Indeed, this is so strikingly the case, that the conclusion is almost inevitable, that, if the *Code Napoleon* were applied in this case, as the *Times* proposed it should, to railway companies—that of making the employers of men responsible to them and their families for all sacrifice of life or bodily injury arising from their employments—the loss of life by explosions in mines would, under such circumstances, be comparatively trifling. I am aware there would be an apparent, and, in some cases, a real, hardship to the proprietors of mines, and other works, in the enforcement of such a law; but I believe it is found to work well, and to give general satisfaction to our French neighbours, and has greatly lessened the amount of fatal accidents to the labourers engaged in hazardous employments. As all Governments, conducted upon Christian and enlightened principles, should act upon the paramount importance of preserving the lives before the property of their subjects, I take the liberty of calling the attention of the public to the subject through a journal, which has so often and so successfully advocated the cause of the weak against the oppression or might of the powerful, in the hope that it may lead to some legislative measure on the subject."

FORTUNES MADE BY ADVERTISING.—From a small pamphlet, entitled *The Art of Making Money*, an extract has been taken, and is going the round of the provincial press, pointing out the facility of making immense sums by the simple process of continuous advertising. Doubtless large sums have been, are, and will be, made by such a system by certain persons of ability, who no doubt would make their way in the world if called upon to play different parts on the great stage of life; but to suppose that men in general must, as a matter of course, acquire wealth by such means, is as absurd as to imagine that all the penniless and shoeless of London are capable of rising to the dignity and wealth of an alderman or the Lord Mayor of London simply by reading the *Young Man's Best Companion*. Money is not so easily made as the writer of the article referred to would lead people to suppose; if it be so, few need be poor. But to our text: fortunes made by advertising. Undoubtedly the greatest man of this day as an advertiser is Holloway, who expends the enormous sum of 20,000*l.* annually in advertisements alone; his name is not only to be seen in nearly every paper and periodical published in the British Isles—but, as if this country was too small for this individual's exploits, he stretches over the whole of India, having agents in all the different parts of the upper, central, and lower provinces of that immense country, publishing his medicaments in the Hindoo, Oordoo, Goozratee, Persian, and other native languages, so that the Indian public can take the pills and use his ointment, according to general directions, as a Cockney would do within the sound of Bow bells. We find him again at Hong Kong and Canton, making his medicines known to the Celestials by means of Chinese translations. We trace him from thence to the Philippine Islands, where he is circulating his preparations in the native languages. At Singapore he has a large depôt; his agents there supply all the islands in the Indian Seas. His advertisements are published in most of the papers at Sydney, Hobart Town, Launceston, Adelaide, Port Philip; and, indeed, in almost every town of that vast portion of the British empire. Returning homewards, we find his pills and ointment selling at Valparaiso, Lima, Callao, and other ports in the Pacific. Doubling the Horn, we track him in the Atlantic—at Monte Video, Buenos Ayres, Santos, Rio de Janeiro, Bahia, and Pernambuco; he is advertising in those parts in Spanish and Portuguese. In all the British West India Islands, as also in the Upper and Lower Canadas, and the neighbouring provinces of Nova Scotia and New Brunswick, his medicines are as familiarly known, and sold by every druggist, as they are at home. In the Mediterranean we find them selling at Malta, Corfu, Athens, and Alexandria, besides at Tunis and other portions of the Barbary states. Any one taking the trouble to look at the *Journal* and *Courier* of Constantinople, may find in these, as well as other papers, that Holloway's medicines are regularly advertised and selling throughout the Turkish empire; and even in Russia, where an almost insurmountable barrier exists, the laws there prohibiting the entrée of patent medicines, Holloway's ingenuity has been at work, and obviates this difficulty by forwarding supplies to his agent at Odessa, a port situated on the Black Sea, where they filter themselves surreptitiously by various channels, into the very heart of the empire. Africa has not been forgotten by this indefatigable man, who has an agent on the River Gambia; also at Sierra Leone, the plague spot of the world, the inhabitants readily avail themselves of the ointment and pills: thus, we can show to our readers that Holloway has made the complete circuit of the globe, commencing with India, and ending, as we now do, with the Cape of Good Hope, where his medicines are published in the Dutch and English languages; and, while speaking of Dutch, we have heard that he has made large shipments to Holland, and is about advertising in every paper or periodical published in that kingdom; we might add, that he has also started his medicine in some parts of France; in some portions of Germany; as also in some of the Italian States. We have been at some little trouble to collect all these facts, because we fear that the article before alluded to, the art of making money, is calculated to lead people to spend their means in the hope (as the author states) of making 100,000*l.* in six years for his pains, by holding up as an easy example to follow such a man as Holloway, who is really a Napoleon in his way. Many may have the means, but have they the knowledge, ability, energy, judgment, and prudence necessary? Failing in any one of these requisites, a total loss is certain. Holloway is a man calculated to undertake any enterprise requiring immense energies of body and mind. No doubt he has been well repaid for all his labours; and is, we should suppose, in a fair way of making a large fortune. Of course, it is not to our interest to deter the public from advertising; but, as guardians of their interest, we think it our incumbent duty to place a lighthouse upon what we consider a dangerous shoal, which may, perhaps, sooner or later prevent shipwreck and ruin to the sanguine and inexperienced about to navigate in such waters. The editor of the *Edinburgh Review*, in a number published about three years ago, stated, that he considered he was making a desirable bequest to posterity, by handing down to them the amount of talent and ability required by the present class of large advertisers. At that period Holloway's mode of advertising was most prominently set forth; and if these remarks, conjointly with his, should descend to a generation to come, it will be known to what extent the subject of this article was able to carry out his views, together with the consequent expenditure in making known the merits of his preparations to nearly the whole world.—*Pictorial Times.*

Proceedings of Public Companies.

MEETINGS DURING THE ENSUING WEEK.

MONDAY.....London and Cornwall Safety Fuse Co.—London Inn, Redruth
Wheal Maud Mining Company—Andrew's Hotel, Redruth
WEDNESDAY...Rhymney Iron Company—London Tavern, at half-past One
THURSDAY.....St. Austell Mining Company—New Inn, Tywardreath, at Five.

[*The meetings of Mining Companies are inserted among the Mining Intelligence.*]

GASPE FISHERY AND COAL-MINING COMPANY.

The first meeting of proprietors of this company, was held on Monday last, the 20th inst., at their offices, New Broad-street.—R. G. BARCLAY, Esq. (who took the chair in the absence of Lord Ingestre, the president of the company), opened the proceedings by calling upon the Secretary, Mr. DYKEN, to read the report, which was so full as to render it unnecessary for him to make any remarks on the progress of the company. The report was a voluminous document, the principal statements in which went to show that their fishery in the Gaspè district and Gulf of St. Lawrence was calculated to be productive of large profit to the company. It, nevertheless, stated that the expectations entertained of the efficiency of Mr. Philip Vibert, from Jersey, who was appointed to manage their affairs in that quarter, were far from being realised, in consequence of which Mr. Dyken was sent to Gaspè, to remedy his mistakes, and to replace the business on a sound footing. The misapplication of the funds of the society had in the first instance been so unproductive as to temporarily defeat, or rather to delay, the plans of the directors, which might otherwise be attended with success. From the efficiency, however, of the present manager, Mr. John Sinclair, it was expected that the undertaking would be prosperous. The timber trade entered into by the proprietors had proved very successful, which statement was confirmed by an offer having been made to them by certain parties to take their saw-mill at Pabos, which was erected for 5500*l.*, on a five years' lease, at an annual rent of 500*l.*, and to supply the company with 120,000 deals per annum. The receipts of the company on account of shares sold and liabilities to be paid, in 1846, amounted to 64,516*l.* 0*s.* 8*d.*, which covered their expenses. The value of fish now in hand was calculated at 4150*l.*, and the profits realised from the timber trade, amounted to 17½ per cent. on the capital expended. The report was adopted unanimously. The declaration of the dividends was postponed until the realisation of the profits on the fish in hand. The first Thursday in February was appointed for their next meeting. The directors were re-appointed at a remuneration of 600*l.* for their services annually; 10*l.* 10*s.* were voted to the auditors; and 300*l.* per annum to the secretary. The thanks of the meeting having been given to the chairman and directors, the meeting dissolved.

WEST CORNWALL RAILWAY.

The first general meeting of shareholders was held, at the offices, Broad-street-buildings, on Tuesday, the 22d inst.

LOUIS VIGURS, Esq., in the chair.

The meeting was made special, for the purpose of authorising the directors to apply to Parliament for powers to make a branch to St. Ives. After a few prefatory remarks from the CHAIRMAN, explanatory of the origin and objects of the scheme, the SECRETARY read the directors' report, by which it appeared that an Act of Parliament was obtained in the last session, after a contest of two years, for constructing this line from Truro to Penzance—the concern having purchased the Hayle Railroad, an old construction, for 80,000*l.*, in paid-up shares of this company. The Cornwall and Devon Company, that had been their opponents in Parliament, was now merged in the South Western Company, which was to terminate at Truro, and there join the present company's line, which thence to Penzance was expected to be so remunerative as to pay at least 10 per cent. on the advances. It was also intended to construct a branch to St. Ives, for which an application would be made for powers in the approaching session, as well as to construct a wharf at the harbour of Hayle. The number of shares issued was 20,000, of which 4000 were given as the purchase of the Hayle line, there remaining still to be allotted, as may hereafter be deemed most advisable, 5000 shares. The amount received on deposits, was 32,000*l.* of which 28,000*l.* had already been paid away in expenses, and it was believed that outstanding liabilities would call for the remainder, the cost of two years' contest being very heavy. Mr. Brunel had been appointed the engineer to the company, and he expected to commence the contracts for the works in about a month, being at liberty to make use of any portions of the Hayle Railroad that might advantageously fall in with his plan. The accounts not being as yet all had in, the directors would not be able to lay a regular balanced account before the shareholders until the half-yearly meeting, in February next, but they could assure the shareholders that every economy had been exercised in their past proceedings. They did not anticipate any opposition from any quarter in the next session: but still it would be necessary for the present meeting to give the directors the power of contending with any should it arise, and it was also necessary that the meeting should confirm the purchase of the Hayle line. When the works should be commenced, a call of about 2*l.* a share would be indispensable, but 4 per cent. interest would be allowed upon deposits and all calls, and 5 per cent. on all advances in anticipation of calls. The report, having been unanimously agreed to, was ordered to be printed and circulated amongst the subscribers; after which, several questions were put to the chairman. These having been satisfactorily answered, a series of resolutions were agreed to, re-appointing the present directors, and appointing two auditors, with certain terms as to their respective remunerations for the year, fixing the salary of the secretary, and granting to the directors full power to go to Parliament for the St. Ives branch, to contest with all opposition, and confirming the purchase of the Hayle line.

BOSTON, STAMFORD, AND BIRMINGHAM RAILWAY.

The first ordinary meeting of shareholders was held, at the offices, Abingdon-street, on Tuesday last, at which THOMAS MACAULAY, Esq., presided.—The report, which was adopted, recited at length the agreement with the Great Northern Company, which was to the effect, that that company guaranteed 6 per cent. on the existing capital of the line in perpetuity—such interest commencing from the opening of the line, or from the 1st of July, 1848, whether the line was completed by that time or not; 5 per cent. in the meantime to be allowed on all calls when paid up. The Great Northern Company were to have the option of purchasing the entire interest of the line at any period they might think fit, after it was opened, at 50 per cent. On the other hand, the shareholders in this line were to have the option of exchanging their shares, at any period within two years of the opening of the entire line between London and York, for the shares at par of the Great Northern Company. Shareholders to have the option of paying up the whole or any part of their calls in advance of 5 per cent. The report was adopted; and a resolution, approving of the agreement, passed. The balance-sheet showed an expenditure of 34,061*l.* not including an outstanding amount of 700*l.*), a great portion of which wasd incurred in serving notices for the whole line of 90 miles, as originally projected by the company. The balance in the hands of the company was 6418*l.* The resolutions will be found in our advertising columns.

CHARING-CROSS BRIDGE COMPANY.

A meeting of the shareholders of this company was held on Monday, the 21st inst., at the offices, Villiers-street, Strand, to take into consideration the intended application to Parliament, for power to erect a free bridge across the Thames, from or near Whitehall-place to the opposite shore of the Thames.

W. HAWES, Esq. (deputy-chairman of the company) in the chair.

The chairman said that the directors of the company, after having examined the plans of the project in question, had waited upon Lord Morpeth, as head of the Woods and Forests department, and explained to him the ruinous effect which would fall upon the company, if Parliament were to sanction the erection of a new bridge in such immediate contiguity to the bridge which had so recently been constructed under the sanction of Parliament—a bridge whose utility to the public had been amply demonstrated by the amount of traffic which passed over it. Lord Morpeth, who was exceedingly courteous in his manner of saying what little he did say, gave no direct answer as to whether the new project was a Government project, but he most decidedly stated that the Government had no funds to place at the disposal of the projectors, and that he did not contemplate providing funds, whether for the bridge, or to compensate parties who might be injured should the construction proceed. He simply said that the project emanated from the Commissioners for Metropolitan Improvements, which was all he knew about it officially. Hereupon, the directors of the present company had proceeded to communicate with the shareholders on this so vital subject. A very numerous meeting had taken place in the Westminster-road, at which a committee for taking active measures of opposition was formed, and that committee was now in operation. A public meeting was that day to be held in Westminster, General Sir De Lacy Evans, in the chair. It had been a frequent question, who were the promoters of the new scheme; that appeared to be a mystery. In the first instance Mr. Barry had been named, but Mr. Grissell, who was intimately acquainted with Mr. Barry's views on the subject, distinctly denied at the former meeting that Mr. Barry had anything to do with it. Again, it had been said that the South-Western Company were the promoters of the project, but he (Mr. Hawes) had every reason to believe and judge that that was not the case. The convenience of that company, on the contrary, was wholly opposed to the project. In his opinion, the whole thing simply arose from the determination of the Metropolitan Improvement Commissioners to appear to be doing somthing, indifferent at what cost to existing interests, or whether that which they did benefitted the public. The existence of three bridges so close to each other as would be Waterloo-bridge, the Hungerford Suspension, and the new bridge in question, would be very dangerous to the navigation of the river, more especially with the low arches which it would seem were in contemplation. What the directors now proposed to do, therefore, was to appoint a parliamentary committee to watch the proceedings of the projectors of this scheme; the committee to consist of the deputy-chairman and two directors of the Charing-cross-bridge Company, of one of the largest shareholders, and of the deputy-chairman of the Market Company, whose junction, if they would consent to it, would have the double advantage of uniting the views of the present company and the interests of both, and of renewing generally that friendly intercourse which was so essential to the settlement of various matters which had hitherto remained in an unsatisfactory condition for both companies. (Hear, hear).

After a brief conversation, the CHAIRMAN proposed:—That this meeting has heard with extreme surprise of the intended application to Parliament for powers to erect a new free bridge from Charing-cross, at a distance at the latter place of 30 yards only from the bridge so recently constructed by the company under the express sanction of Parliament. That the projected measure, while it is altogether uncalled for by the public, would be most ruinous to the property of this company. That the directors be, and they are hereby, authorised by every means in their power, to oppose the intended application to Parliament, and to adopt such measures for the protection of the proprietors as they may deem expedient.—The resolution was unanimously adopted.

Mr. STUTELY, the deputy-chairman of the Market Company, said, that he felt bound to consult his fellow-directors before he consented to act on the proposed committee; but he had every disposition to meet the friendly overtures of the company, and to aid its views in the present matter.

Thanks were then voted to the chairman, and the meeting separated.

BOSTON, STAMFORD, AND BIRMINGHAM RAILWAY.

(STAMFORD TO WISBECH.)

At the First Ordinary Meeting of shareholders, under the Act of Incorporation, held at the company's offices, 18, Abingdon-street, Westminster, on Tuesday, the 22d day of Dec., 1846,

THOMAS MACAULAY, Esq. (of Leicester), in the chair.

The report having been read by the secretary, the following resolutions were proposed, and unanimously adopted.

It was moved by the chairman, seconded by Mr. Middleton, and carried unanimously,—That the report, now read, be received and adopted, and printed and circulated amongst the shareholders.

It was moved by Mr. Badger, seconded by Mr. Watkins, and carried unanimously,—That the terms offered by the Great Northern Railway to this company, as specified in the report, are approved of by this meeting.

It was moved by Mr. Craddock, seconded by Mr. Wilson, and carried unanimously,—That the following gentlemen be chosen, or re-elected, directors of this company:—

Edmund Denison, Esq., M.P., Doncaster
James Arbouin, Esq., 3, Brunswick-square
Robert Gill, Esq., Mansfield, Woodhouse, Notts
Captain Laws, R.N., 20, Sussex-square, Hyde-park
William Skinner Marshall, Esq., 4, Hyde-park-square
George Hussey Packe, Esq., Caythorpe, Grantham
Francis Parker, Esq., Manchester
Archibald Frederick Paull, Esq., 33, Devonshire-place
William Wilberforce Pearson, Esq., 28, Chapel-street, Belgrave-square
William Atkinson Gardner, Esq., 4, Suffolk-street, Pall-mall
Charles Holte Bracebridge, Esq., Atherstone Hall
Thomas Macaulay, Esq., Leicester.

It was moved by Mr. Gattie, seconded by Mr. Haines, and carried unanimously,—That £1000 be allowed to the directors of this company as a remuneration for their services during their ensuing year of office—the same to be divided in such a manner as they shall deem expedient.

It was moved by Mr. Gardner, seconded by Mr. Pearson, and carried unanimously,—That Edward James Hawker, Esq., of 4, Wilton-street, Belgrave-square, and Ashford Lodge, near Petersfield, and William Thomas Preston, Esq., of 2, Fig-tree-court, Temple, and Flasby Hall, Gargrave, Yorkshire, be appointed auditors of this company's accounts, at salaries of £20 each; and that Mr. George Saward be appointed secretary, at £150 per annum.

THOMAS MACAULAY, Chairman.

It was moved by Mr. Wilson, seconded by Mr. Bowman, and carried unanimously,—That the thanks of this meeting be tendered to the chairman and directors of this company, for their services in obtaining the Act, and in conducting the affairs of the company.

GEORGE SAWARD, Secretary.

CORNWALL RAILWAY—FIRST GENERAL MEETING

OF PROPRIETORS.—At the First Ordinary Meeting of the proprietors of this company, held, pursuant to advertisement, at the Assembly Rooms, Truro, on Wednesday, the 16th day of December, 1846,

WILLIAM MANSEL TWEEDY, Esq., in the chair,

The following resolutions were put from the chair and carried unanimously:—

1. That the register of proprietors, now produced, be authenticated by the common seal of the company.
2. The capital of the company having been divided into shares of £30 each, and £25 each, that a £50 share shall be considered as one share, and a £25 share as a half share, and, that, for the purpose of voting, two £25 shares shall be considered as one share.
3. That the report of the directors now read be adopted, and printed, and circulated amongst the proprietors.
4. That in addition to Frederick Pratt Barlow, Esq., James Gibbs, Esq., Patrick Miller, M.D., Thomas Gill, Esq., M.P., John Rundle, Esq., Thomas Woolcombe, Esq., and Ralph Cole, Esq., the directors nominated by the Great Western, Bristol and Exeter, and South Devon Companies, the following gentlemen be appointed the directors of this company:

Joseph Thomas Treffry, Esq.	Robert Were Fox, Esq.
Thomas James Agar Robartes, Esq.	John Vivian, Esq.
Clement Carlyon, M.D.	William Mansel Tweedy, Esq.
John Gwatkin, Esq.	W. Carne, Esq.
Michael Williams, Esq.	George Smith, Esq.

5. That the secretary be paid £500 a-year for his services from the time of his engagement by the directors.
6. That the directors be authorised to take such measures as they may deem expedient to oppose in Parliament, or otherwise, any projects which they may consider to be injurious to the interests of this company.

It was moved by A. Fox, Esq., and seconded by Dr. Barham, and resolved unanimously,

7. That George Jones, Esq., of Bristol, and Edward Clifton Carne, Esq., of Falmouth, be the auditors for the year ensuing, and that they be paid a salary of £20 each for their services.

It was moved by John Paynter, Esq., and seconded by Alfred Jenkin, Esq., and resolved unanimously,

8. That the sum of £1700 per annum be assigned as the remuneration for the directors; to be apportioned in such manner as they may determine, to commence from the passing of the Act.

W. MANSEL TWEEDY, Chairman.

It was moved by E. C. Marriott, Esq., and seconded by R. R. Brond, Esq., and resolved unanimously,

That the thanks of the shareholders be presented to W. M. Tweedy, Esq., for his conduct in the chair on this occasion, and for the assiduity and zeal with which he has prosecuted this undertaking from its commencement to the present time.

It was moved by R. Barclay Fox, Esq., and seconded by J. Carlyon, Esq., and resolved unanimously,

That the thanks of the shareholders be presented to the directors, for the perseverance and energy with which they have promoted the interests of this company.

W. H. BOND, Secretary.

At a SPECIAL GENERAL MEETING of the proprietors of this company, held pursuant to advertisement, on Wednesday, the 16th day of December, 1846,

WILLIAM MANSEL TWEEDY, Esq., in the chair.

Resolved unanimously—That the directors be, and they are hereby empowered, to take such measures as they may deem expedient, to apply to Parliament in the next session for an Act for the alteration of the line of the Cornwall Railway between Plymouth and a point near Saltash; and for powers to purchase, lease, or jointly construct and use portions of the South Devon Railway and works, and to purchase the Saltash Ferry; and to sell or lease the new works to the Great Western Railway Company, or to the Bristol and Exeter Railway Company, or to the South Devon Railway Company, and to do such acts as the directors may deem expedient in reference to the capital for such purposes, and for the amendment of the powers already conferred by Parliament on this company.

(Signed) W. MANSEL TWEEDY, Chairman.

WEST CORNWALL RAILWAY.—At the First General

Meeting of the West Cornwall Railway Company, held, in pursuance of the provisions of the Act, at the offices of the company, No. 35, Broad-street-buildings, London, on Tuesday, the 22d day of December, 1846,

LOUIS VIGURS, Esq. (deputy-chairman of the company), in the chair,

The secretary having read the advertisement convening the meeting, and produced the register of the shareholders,—It was resolved unanimously,—

1. That the register of shareholders now produced be authenticated by the common seal of the company.
2. That the report of the directors now read, be received and adopted, and printed for circulation amongst the proprietors.
3. That the following be appointed directors of this company, viz.:—

James Alston, Esq.	James Oliver Mason, Esq.
Frederick Pratt Barlow, Esq.	Frederick Ricketts, Esq.
Robert Frederick Gower, Esq.	Charles Russell, Esq., M.P.
Edwin Ley, Esq.	Edmund Turner, Esq., M.P.
John MacDonnell, Esq.	Louis Vigurs, Esq.

4. That the sum of £1000 per annum be assigned as the remuneration to the directors, to be distributed in such manner as they may think proper.
5. That Richard Pearse, Esq., of Penzance, and John Routh, Esq., of London, be requested to act as auditors of the company, and that an allowance of £10 10*s.* per annum be assigned for their service.
6. That the salary of the secretary be fixed at £400 per annum.
7. That this meeting do confirm the agreement entered into between this company and the Hayle Railway Company, and the steps taken by the directors to carry out the same.
8. That the directors be authorised to take such measures as they may deem expedient to oppose in Parliament, or otherwise, any projects which they may consider to be injurious to the interests of the company.
9. That the directors be authorised and empowered to apply to Parliament in the ensuing session, for powers to enable the company to construct a branch railway from the line of the said West Cornwall Railway to St. Ives with a short branch, or extension thereout, to Norwayman's wharf, in the parish of Lelant; and also to purchase, enlarge, and construct certain wharfs and quays, at or near Hayle, all in the said county of Cornwall. And that the directors be authorised, on behalf of the company, to make such arrangements for providing the amount to be deposited in the Bank of England, and otherwise to comply with the Standing Orders of Parliament, as they may find expedient.

The chairman having quitted the chair,—it was resolved unanimously,

That the best thanks of the meeting be given to the chairman for his able conduct in the chair.

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